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AN

ACCOUNT

OF THE

Bilious remitting Yellow Fever,

AS

IT APPEARED

IN THE

CITY OF PHILADELPHIA,

IN THE YEAR 1793.

By Benjamin Rush, M.D.

PROFESSOR OF THE INSTITUTES, AND OF CLINICAL MEDICINE
IN THE UNIVERSITY OF PENNSYLVANIA.

SECOND EDITION.

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THE PREFACE.

THE delay of the following publication has been occaſioned by the want of health to prepare it for the preſs, during the winter months. It now goes forward, under the great diſadvantages, of having been haſtily copied from my notes, amidſt frequent profeſſional interruptions. Its imperfections I hope will be overlooked, when it is conſidered, that my only deſign in publiſhing thus prematurely, was to obviate as much as poſſible, the danger of the diſeaſe, ſhould it unhappily appear in our city in the courſe of the preſent ſeaſon.

In

In the hiſtory of the fever, I have introduced an account of the ſymptoms and prognoſis, in ſuch places as they occurred moſt naturally, without a ſtrict regard to the artificial order of the ſchools.

In the detail of the ſymptoms, I have divided the body into different ſyſtems. This diviſion I have found to accord more eaſily with the principles of medicine which I have adopted, than the common method of deſcribing them, as they appear in the animal, natural, and vital functions.

In republiſhing an account of the controverſies between the phyſicians of Philadelphia, my motives were, to prevent the revival of certain opinions and modes of practice, by bringing them forward under the patronage of reſpectable names, and to juſtify in a great meaſure, from their influence, the want of univerſal ſucceſs, by the only ſafe, and

proper mode of treating the yellow fever. I hope I ſhall be excuſed for this part of the following work, when it is perceived, that I have been more minute in relating my own miſtakes, than thoſe of other Phyſicians; and that I have connected no names with the opinions and modes of practice which I have oppoſed, but ſuch as were given to the public by their authors, during the prevalence of the fever.

BENJAMIN RUSH.

PHILADELPHIA,
June 14th, 1794.

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AN

AN

ACCOUNT

OF THE

Bilious remitting Yellow Fever,

AS IT *APPEARED* IN

PHILADELPHIA,

IN THE YEAR 1793.

AN

ACCOUNT, &c.

BEFORE I proceed to deſcribe the fever which is to be the ſubject of this Eſſay, it will be proper to give a ſhort account of the diſeaſes which preceded it.

The ſtate of the weather during the firſt ſeven months of the year, and during the time in which the fever prevailed in the city, as recorded by Mr Rittenhouſe, will be inſerted immediately after the hiſtory of the diſeaſe.

The MUMPS which made their appearance in December 1792, continued to prevail during the month of January 1793. Beſides this diſorder, there were many caſes of catarrh in the city,

brought on chiefly by the inhabitants expoſing themſelves for ſeveral hours on the damp ground in viewing the aerial voyage of Mr Blanchard on the 9th day of the month.

The weather which had been moderate in December and January became cold in February. The mumps continued to prevail during this month with ſymptoms ſo inflammatory, as to require in ſome caſes two bleedings. Many people complained this month of pains and ſwellings in the jaws. A few had the ſcarlatina anginoſa.

The mumps, pains in the jaws, and ſcarlatina continued throughout the month of March. I was called to two caſes of pleuriſy in this month, which terminated in a temporary mania. One of them was in a woman of ninety years of age, who recovered. The blood drawn in the other caſe, (a gentleman from Maryland) was diſſolved. The continuance of a tenſe pulſe, induced me notwithſtanding to repeat the bleeding. The blood was now ſizy. A third bleeding was preſcribed, and my patient recovered. Several caſes of obſtinate eryſipelas ſucceeded inoculation in children during this, and the next month, one of which proved fatal.

Bloſſoms

Bloſſoms were univerſal on the fruit-trees, in the gardens of Philadelphia, on the firſt day of April. The ſcarlatina anginoſa continued to be the reigning epidemic in this month.

There were ſeveral warm days in May, but the city was in general healthy. The birds appeared two weeks ſooner this ſpring than uſual.

The regiſter of the weather ſhews, that there were many warm days in June. The ſcarlatina continued to maintain its empire during this month.

The weather was uniformly warm in July. The ſcarlatina continued during the beginning of this month, with ſymptoms of great violence. A ſon of James Sharſwood, aged ſeven years, had with the common ſymptoms of this diſorder, great pains and ſwellings in his limbs, accompanied with a tenſe pulſe. I attempted in vain to relieve him by vomits and purges. On the 10th day of the month, I ordered ſix ounces of blood to be drawn from his arm, which I obſerved afterwards to be very ſizy. The next day he was nearly well. Between the 22d and the 24th days of the month, there died three perſons whoſe reſpective ages were 80, 92, and 96½. The weather at this time

was extremely warm. I have elſewhere taken notice of the fatal influence of extreme heat, as well as cold, upon human life in old people. A few bilious remitting fevers appeared towards the cloſe of this month. One of them under my care, ended in a tedious typhus mitior, from which the patient was recovered with great difficulty. It was the ſon of Dr Hutchins of the iſland of Barbadoes.

The weather for the firſt two or three weeks in Auguſt was temperate, and pleaſant. The colera morbus, and remitting fevers were now common. The latter were attended with ſome inflammatory action in the pulſe, and a determination to the breaſt. Several dyſenteries appeared at this time, both in the city and in its neighbourhood. During the latter part of July, and the beginning of this month, a number of the diſtreſſed inhabitants of St Domingo, who had eſcaped the deſolation of fire and ſword, arrived in the city. Soon after their arrival, the influenza made its appearance, and ſpread rapidly among our citizens. The ſcarlatina ſtill kept up a feeble exiſtence among children. The above diſeaſes were univerſal, but they were not attended with much mortality. They prevailed in different parts of the city, and each ſeemed to appear occaſionally to be the ruling epidemic.

epidemic. The weather continued to be warm and dry. There was a heavy rain on the 25th of the month, which was remembered by the citizens of Philadelphia as the laſt that fell, for many weeks afterwards.

There was ſomething in the heat and drought of the ſummer months, which was uncommon, in their influence upon the human body. Labourers every where gave out (to uſe the country phraſe) in harveſt, and frequently too when the mercury in Fahrenheit's thermometer was under 84°. It was aſcribed by the country people to the calmneſs of the weather, which left the ſweat produced by heat and labour, to dry ſlowly upon the body.

The crops of grain and graſs were impaired by the drought. The ſummer fruits were as plentiful as uſual, particularly the melons, which were of an excellent quality. The influence of the weather upon the autumnal fruits, and upon vegetation in general, ſhall be mentioned hereafter.

I beg pardon for the length of this introduction. Some parts of it, I hope, will not appear uſeleſs in the ſequel of this work.

I now enter upon a detail of ſome ſolitary caſes of the epidemic, which ſoon afterwards ſpread diſtreſs through our city, and terror throughout the United States.

On the 5th of Auguſt, I was requeſted by Dr Hodge to viſit his child. I found it ill with a fever of the billious kind, which terminated (with a yellow ſkin) in death on the 7th of the ſame month.

On the 6th of Auguſt, I was called to Mrs Bradford, the wife of Mr Thomas Bradford. She had all the ſymptoms of a bilious remittent, but they were ſo acute, as to require two bleedings, and ſeveral ſucceſſive doſes of phyſic. The laſt purge ſhe took was a doſe of *calomel*, which operated plentifully. For ſeveral days after her recovery, her eyes and face were of a yellow colour.

On the ſame day, I was called to the ſon of Mrs M'Nair, who had been ſeized violently with all the uſual ſymptoms of a bilious fever. I purged him plentifully with ſalts and creamor tartar, and took ten or twelve ounces of blood from his arm. His ſymptoms appeared to yield to theſe remedies; but on the 10th of the month

an

an hæmorrhage from the noſe came on, and on the morning of the 12th he died.

On the 7th of this month I was called to viſit Richard Palmer, a ſon of Mrs Palmer in Cheſnut-ſtreet. He had been indiſpoſed for ſeveral days with a ſick ſtomach and vomiting after eating. He now complained of a fever and head-ach. I gave him the uſual remedies for the bilious fever, and he recovered in a few days. On the 15th day of the ſame month, I was ſent for to viſit his brother William, who was ſeized with all the ſymptoms of the ſame diſorder. On the 5th day his head-ach became extremely acute, and his pulſe fell to ſixty ſtrokes in a minute. I ſuſpected congeſtion to have taken place in his brain, and ordered him to loſe eight ounces of blood. His pulſe became more frequent, and leſs tenſe after bleeding, and he recovered in a day or two afterwards.

On the 14th day of this month I was ſent for to viſit Mrs Leaming, the wife of Mr Thomas Leaming. I ſuſpected at firſt that ſhe had the influenza, but in a day or two, her fever put on bilious ſymptoms. She was affected with an uncommon diſpoſition to faint. Her pulſe was languid, but *tenſe*. I took a few ounces of blood from her,

and

and purged her with ſalts, and *calomel.* I afterwards gave her a ſmall doſe of laudanum which diſagreed with her. In my note book, I find I have recorded, that "ſhe was the worſe for it." I was led to make this remark by its being ſo very uncommon, for a perſon who had been properly bled and purged, to take laudanum in a common bilious fever, without being benefited by it. She recovered however ſlowly, and was yellow for many days afterwards.

On the morning of the 18th of this month, I was requeſted to viſit Peter Aſton, in Vine-ſtreet, in conſultation with Dr Say. I found him on the 3d day of a moſt acute bilious fever. His eyes were inflamed, and his face fluſhed with a deep red colour. His pulſe ſeemed to forbid evacuations. We preſcribed the ſtrongeſt cordials; but to no purpoſe. We found him at 6 o'clock in the evening, ſitting upon the ſide of his bed, perfectly ſenſible, but without a pulſe, with cold clammy hands, and his face of a yellowiſh colour. He died a few hours after we left him.

None of the caſes which I have mentioned, excited the leaſt apprehenſion of the exiſtence of a yellow fever in our city; for I had frequently ſeen ſporadic caſes in which the common bilious fever of

of Philadelphia, had put on ſymptoms of great malignity, and terminated fatally in a few days, and now and then with a yellow colour on the ſkin, before, or immediately after death.

On the 19th of this month I was requeſted to viſit the wife of Mr Peter Le Maigre, in Water-ſtreet, between Arch and Race-ſtreets, in conſultation with Dr Foulke and Dr Hodge. I found her in the laſt ſtage of a highly bilious fever. She vomited conſtantly, and complained of great heat and burning in her ſtomach. The moſt powerful cordials, and tonics were preſcribed, but to no purpoſe. She died on the evening of the next day.

Upon coming out of Mrs Le Maigre's room, I remarked to Dr Foulke and Dr Hodge, that I had ſeen an unuſual number of bilious fevers, accompanied with ſymptoms of uncommon malignity, and that I ſuſpected all was not right in our city. Dr Hodge immediately replied, that a fever of a moſt malignant kind had carried off four or five perſons within ſight of Mr Le Maigre's door, and that one of them had died in twelve hours after the attack of the diſorder. This information ſatisfied me that my apprehenſions were well founded. The origin of this fever was diſcovered to

me at the ſame time, from the account which Dr Foulke gave me of a quantity of damaged coffee which had been thrown upon Mr Ball's wharf, and in the adjoining dock, on the 24th of July, nearly in a line with Mr Le Maigre's houſe, and which had putrefied there to the great annoyance of the whole neighbourhood.

After this conſultation I was ſoon able to trace all the caſes of fever which I have mentioned to this ſource. Dr Hodge lived a few doors above Mr Le Maigre's, where his child had been expoſed to the exhalation from the coffee for ſeveral days. Mrs Bradford had ſpent an afternoon in a houſe directly oppoſite to the wharf and dock on which the putrid coffee had emitted its noxious effluvia, a few days before her ſickneſs, and had been much incommoded by it. Her ſiſter Mrs Leaming had viſited her during her illneſs, and probably caught the fever from her, for ſhe perfectly recollected perceiving a peculiar ſmell unlike to any thing ſhe had been accuſtomed to in a ſick room, as ſoon as ſhe entered the chamber where her ſiſter lay. Young Mr M'Nair and Mrs Palmer's two ſons had ſpent whole days in a compting houſe, near where the coffee was expoſed, and each of them had complained of having been made

ſick

ſick by its offenſive ſmell, and Mr Aſton had frequently been in Water-ſtreet near the ſource of the exhalation.

This diſcovery of the malignity—extent—and origin of a fever which I knew to be highly contagious, as well as mortal, gave me great pain. I did not heſitate to name it, the *Bilious remitting Yellow Fever*. I had once ſeen it epidemic in Philadelphia, in the year 1762. Its ſymptoms were among the firſt impreſſions which diſeaſes made upon my mind. I had recorded ſome of theſe ſymptoms. I had likewiſe recorded its mortality. I ſhall here introduce a ſhort account of it from a note book which I kept during my apprenticeſhip.

" In the year 1762, in the months of Auguſt, " September, October, November and December, the bilious yellow fever prevailed in Phi- " ladelphia, after a *very hot ſummer*, and ſpread " like a plague, carrying off daily for ſome time, " upwards of twenty perſons.

" The patients were generally ſeized with ri- " gors, which were ſucceeded with a violent fever, " and pains in the head and back. The pulſe " was full, and ſometimes irregular. The eyes

" were inflamed, and had a yellowiſh caſt, and a " vomiting almoſt always attended.

" The 3d, 5th and 7th days were moſtly criti- " cal, and the diſeaſe generally terminated on one " of them, in life or death.

" An eruption on the 3d or 7th day over the " body, proved ſalutary.

" An exceſſive heat, and burning about the " region of the liver, with cold extremities, por- " tended death to be at hand."

I have taken notice in my note book, of the principal remedy which was preſcribed in this fever by my preceptor in medicine, but this ſhall be mentioned hereafter.

Upon my leaving Mrs Le Maigre's, I expreſſed my diſtreſs at what I had diſcovered, to ſeveral of my fellow citizens. The report of a malignant and contagious fever being in town, ſpread in every direction, but it did not gain univerſal credit. Some of thoſe phyſicians who had not ſeen patients in it, denied that any ſuch fever exiſted, and aſſerted (though its mortality was not denied) that it was nothing but the common annual remittent

mittent of the city. Many of the citizens, joined the phyſicians in endeavouring to diſcredit the account I had given of this fever, and for a while, it was treated with ridicule or contempt. Indignation in ſome inſtances was excited againſt me, and one of my friends whom I adviſed in this early ſtage of the diſorder, to leave the city, has ſince told me that for that advice, " he had hated me."

My lot in having thus diſturbed the repoſe of the public mind, upon the ſubject of general health, was not a ſingular one. There are many inſtances upon record, of phyſicians who have rendered themſelves unpopular, and even odious to their fellow citizens, by giving the firſt notice of the exiſtence of malignant and mortal diſeaſes. A phyſician who aſſerted that the plague was in Meſſina in the year 1743, excited ſo much rage in the minds of his fellow citizens againſt him, as to render it neceſſary for him to ſave his life by retreating to one of the churches of that city.

In ſpite, however, of all oppoſition, the report of the exiſtence of a malignant and contagious fever in the city, gained ſo much ground, that the governor of the ſtate directed Dr Hutchinſon, the inſpector of ſickly veſſels, to inquire into the truth

of

of it, and into the nature of the diſeaſe. In conſequence of this order, I received the following letter from Dr Hutchinſon.

DEAR SIR,

A CONSIDERABLE alarm has taken place, in conſequence of the appearance of an infectious diſorder in this city; from which the governor has been induced to direct me to make enquiries relative to the exiſtence and nature of ſuch diſorder. In executing this duty, I muſt rely on the aſſiſtance of ſuch of my medical brethren as may have been called to attend any of the perſons ſuppoſed to have been infected: as I underſtand you have had ſeveral of them under your care, I would be much obliged to you to communicate to me (as ſpeedily as can be done with convenience to yourſelf) ſuch facts as you have been able to aſcertain relative to the exiſtence of ſuch diſorder; in what part of the city it prevails; when it was introduced; and what was the probable cauſe of it.

I am, Sir,

With the greateſt reſpect,

Your obedient ſervant,

J. HUTCHINSON.

AUGUST 24th, 1793.

Dr Benjamin Ruſh.

To

To this letter I wrote the following anſwer a few hours after it came to hand.

DEAR SIR,

A MALIGNANT fever has lately appeared in our city, originating I believe from ſome damaged coffee, which putrefied on a wharf near Arch-ſtreet. The fever was confined for a while to Water-ſtreet, between Race and Arch-ſtreets; but I have lately met with it in Second-ſtreet, and in Kenſington; but whether propagated by contagion, or by the original exhalation, I cannot tell. The diſeaſe puts on all the intermediate forms of a mild remittent, and a typhus gravior. I have not ſeen a fever of ſo much malignity, ſo general, ſince the year 1762.

From, dear ſir,

Auguſt 24th, 1793. } Yours ſincerely,

BENJ. RUSH.

A FEW days afterwards, the following publication, by Dr Hutchinſon, appeared in the American Daily Advertiſer of Auguſt 28th.

THE governor having directed an inquiry to aſcertain the facts, reſpecting the exiſtence of a contagious fever in the city, and the probable means of removing it, Dr Hutchinſon, the phyſician of the port, has made the following ſtatement upon the ſubject, in a letter to Nathaniel Falconer, Eſq. health-officer of the port of Philadelphia.

DEAR SIR,

IMMEDIATELY on the receipt of your letter, with the encloſure from the governor, ſtating that a conſiderable alarm had taken place, in conſequence of the appearance of an infectious diſorder in this city, I endeavoured to take meaſures to aſcertain the facts, relative to the exiſtence of ſuch diſeaſe: for this purpoſe, I wrote to ſuch of my medical brethren, who had been called on to attend perſons ſuppoſed to have been infected; and from their anſwers, as well as from my own obſervations, I am convinced that a malignant fever has lately made its appearance in Water-ſtreet and in Kenſington; principally in Water-ſtreet between Arch and Race-ſtreets. This part of the city I examined perſonally on Thurſday and Friday laſt, and found that eaſt of Front-ſtreet, and between Arch and Race-ſtreets, ſixty-ſeven perſons were diſeaſed, many with the malignant fever. Thirteen of them are ſince dead, and numbers remain ill. For a while this fever was confined to the above-

abovementioned part of the city, but the diſorder is ſpreading, and now appears in other places, ſo that ſeveral are affected in other parts of Water-ſtreet, ſome in Second-ſtreet, ſome in Vine-ſtreet, ſome in Carter's-alley, ſome in other ſtreets; but, in moſt caſes the contagion can be traced to Water-ſtreet. Dr Say, who has attended more in this diſeaſe than any other phyſician, informs me, that he firſt obſerved it in Kenſington, on the fifth or ſixth of this month; that he did not perceive it in Water-ſtreet, until about the twelfth or fifteenth, but that on its appearance in the latter place, the whole neighbourhood was ſoon affected—He further informs me, that he has at this time upwards of 40 patients, which he ſuppoſes to be infected; and that he has loſt about 20 patients in this diſeaſe ſince its firſt appearance. As far as I have been able to aſcertain, the number of perſons who have died altogether of this fever, amounts to 40 or thereabouts*.

The general opinion both of the medical gentlemen, and of the inhabitants of Water-ſtreet is, that the contagion originated from ſome damaged coffee, or other putrefied vegetable and animal mat-

* The regiſter of the deaths ſhows that it amounted at that time to upwards of 150.

ters; and on enquiry, it appears, that on a few wharfs above Arch-ſtreet, there was not only a quantity of damaged coffee, which was extremely offenſive, expoſed for ſome time, but alſo ſome putrid hides, and other putrid animal and vegetable ſubſtances. Should, however, Dr Say's opinion be well founded, that he obſerved the diſeaſe in Kenſington previouſly to its appearance in Water-ſtreet, this cannot be the original cauſe of the contagion.

It does not appear to be an imported diſeaſe; for I have heard of no foreigners or ſailors that have hitherto been infected; nor has it been found in any lodging houſes; but it is, on the contrary, principally confined to the inhabitants of Water-ſtreet, and ſuch as have done buſineſs, or had conſiderable intercourſe, with that part of the city. The Diſpenſary phyſicians tell me, that out of the large number of ſick, now under the care of that charitable inſtitution, they have had but one perſon afflicted with this fever. In the Pennſylvania Hoſpital, the diſorder does not exiſt.

The diſeaſe appears differently in different perſons; it puts on all the intermediate forms between a mild remittent and the worſt ſpecies of Typhus Gravior.

I en-

I encloſe you a copy of the proceedings of the college of phyſicians, which contains their recommendation of the means for preventing the future progreſs of the diſeaſe.

I am, with the greateſt reſpect,
Your moſt obedient ſervant,

PHILADELPHIA, *Auguſt 27th*, 1793. } J. HUTCHINSON.

The diſeaſe continued to ſpread, and with a degree of mortality that had long been unknown by common fevers.

On the 25th of the month, the college of phyſicians was ſummoned by their preſident to meet, in order to conſult about the beſt methods of treating this fever, and of checking its progreſs in the city. After ſome conſideration upon the nature of the diſeaſe, a committee was appointed to draw up ſome directions for thoſe purpoſes; and the next day the following were preſented to the college, and adopted unanimouſly by them. They were afterwards publiſhed in moſt of the news papers.

PHILADELPHIA, *Auguſt 26*, 1793.

THE college of phyſicians having taken into conſideration the malignant and contagious fever

that now prevails in this city, have agreed to recommend to their fellow citizens the following means of preventing its progreſs.

1ſt. That all unneceſſary intercourſe ſhould be avoided with ſuch perſons as are infected by it.

2d. To place a mark upon the door or window of ſuch houſes as have any infected perſons in it.

3d. To place the perſons infected in the centre of large and airy rooms, in beds without curtains, and to pay the ſtricteſt regard to cleanlineſs, by frequently changing their body and bed linen, alſo by removing, as ſpeedily as poſſible, all offenſive matters from their rooms.

4th. To provide a large and airy hoſpital, in the neighbourhood of the city, for the reception of ſuch poor perſons as cannot be accommodated with the above advantages in private houſes.

5th. To put a ſtop to the tolling of the bells.

6th. To bury ſuch perſons as die of this fever in carriages, and in as private a manner as poſſible.

7th. To

7th. To keep the ſtreets and wharfs of the city as clean as poſſible.—As the contagion of the diſeaſe may be taken into the body and paſs out of it, without producing the fever, unleſs it be rendered active by ſome occaſional cauſe, the following means ſhould be attended to, to prevent the contagion being excited into action in the body.

8th. To avoid all fatigue of body and mind.

9th. To avoid *ſtanding* or *ſitting* in the ſun; alſo in a current of air, or in the evening air.

10th. To accommodate the dreſs to the weather; and to exceed rather in warm than in cool clothing.

11th. To avoid intemperance, but to uſe fermented liquors, ſuch as wine, beer, and cyder, in moderation.

The college conceive *fires* to be very ineffectual, if not dangerous means of checking the progreſs of this fever. They have reaſon to place more dependence upon the burning of *gun-powder*. The benefits of *vinegar* and *camphor*, are confined chiefly to infected rooms, and they cannot be uſed too frequently upon handkerchiefs, or in ſmelling-bottles,

by perſons whoſe duty calls them to viſit or attend the ſick.

Signed by order of the college,

WILLIAM SHIPPEN, JUN.
Vice Preſident.

SAMUEL P. GRIFFITTS,
Secretary.

From a conviction that the diſeaſe originated in the putrid exhalations from the damaged coffee, I publiſhed in the American Daily Advertiſer of Auguſt 29th, the following ſhort addreſs to the citizens of Philadelphia, with a view of directing the public attention to the ſpot where the coffee lay, and thereby of checking the progreſs of the fever as far as it was continued by the original cauſe.

" Mr DUNLAP,

" A DOUBT has been expreſſed by Dr Hutchinſon, in his letter to the health-officer, whether the malignant fever which now prevails in our city, originated in an exhalation from ſome putrid coffee on a wharf, between Arch and Race-ſtreets, *becauſe* it made its firſt appearance at Kenſington.

Upon

Upon enquiry, it appears that the firſt perſons who died with this fever, about the 5th of the month, in that village, had been previouſly expoſed to the atmoſphere of the wharf, and that three of the crew of the Daniſh ſhip, who are now ill with it at Kenſington, received the ſeeds of the diſeaſe on board their ſhip, while ſhe lay at or near Race-ſtreet wharf. If theſe facts could not be aſcertained, it does not follow, that the diſeaſe was not generated by the putrid coffee; for, morbid exhalations, it is well known, produce fevers at the diſtance of two and three miles, where they are not oppoſed by houſes, woods, or a hilly country. This is obvious to all the farmers who live in the neighbourhood of mill-ponds.

" It is no new thing for the effluvia of putrid vegetables to produce malignant fevers. Cabbage, onions, black pepper, and even the mild potatoe, when in a ſtate of putrefaction, have all been the remote cauſes of malignat fevers. The noxious quality of the effluvia from mill-ponds, is derived wholly from a mixture of the putrefied leaves and bark of trees, with water.

" It is much leſs common for the effluvia of putrid animal matters to produce fevers. How ſeldom do we hear of them in the neighbourhood of

ſlaughter-houſes, or of the work-ſhops of ſkinners or curriers?

"Theſe obſervations are intended to ſerve two purpoſes: 1ſt, To ſupport the opinion of Dr Hutchinſon, that the malignant fever, which has excited ſo general and ſo juſt an alarm in our city, is *not an imported* diſeaſe; and, 2dly, To direct the attention of our citizens to the ſpot from whence this ſevere malady has been derived. It will be impoſſible to check it during the continuance of warm and dry weather, while any of the impure matter which produced it, remains upon the peſtilential wharf.

R."

This publication had no other effect, than to produce freſh clamours againſt the author; for the citizens as well as moſt of the phyſicians of Philadelphia had adopted a traditional opinion, that the yellow fever could exiſt among us, only by importation from the Weſt Indies.

In conſequence, however, of a letter from Dr Foulke to the Mayor of the city, in which he had decided, in a poſitive manner, in favour of the generation of the fever from the putrid coffee; the mayor gave orders for the removal of the coffee, and

and the cleaning of the Wharf and dock. It was ſaid that meaſures were taken for this purpoſe; but Dr Foulke, who viſited the place where the coffee lay, has repeatedly aſſured me, that they were ſo far from being effectual, that an offenſive ſmell was exhaled from it many days afterwards.

I ſhall paſs over for the preſent, the facts and arguments on which I ground my aſſertion of the generation of this fever in our city. They will come in more properly in the cloſe of the hiſtory of the diſeaſe.

The ſeeds of the fever, whether received into the body, from the putrid effluvia of the coffee, or by contagion, generally excited the diſeaſe in a few days. I met with ſeveral caſes in which it acted, ſo as to produce a fever on the ſame day, in which it was received into the ſyſtem, and I heard of two caſes in which it excited ſickneſs, fainting, and fever, within one hour after the perſons were expoſed to it. I met with no inſtance in which there was a longer interval than ſixteen days, between the contagion being received into the body, and the production of the diſeaſe.

This poiſon acted differently in different conſtitutions, according to previous habits, to the degrees

grees of predispoſing debility, or to the quantity and concentration of the contagion which was applied to the body.

In ſome conſtitutions the contagion was at once a remote, a predispoſing, and an exciting cauſe of the diſeaſe; hence ſome perſons were affected by it, who had not departed in any inſtance from their ordinary habits of living, as to diet, dreſs, and exerciſe. But it was more frequently brought on by ſome predispoſing, or exciting cauſe. I ſhall briefly enumerate each of them.

Whatever be the ſpecific quality of the matter which produced the fever, it is certain, that it acted as a ſtimulus upon the whole ſyſtem. In a moderate degree, it produced only a quickneſs and fulneſs of the pulſe, but when it was more active, it induced that ſpecies of debility which has been happily called *indirect*. It is the reverſe of *direct* debility, which is produced by the abſtraction of natural, and uſual ſtimuli from the body. When the contagion acted with ſo much force, as to induce indirect debility, a fever ſometimes followed without the aid of an exciting cauſe, but this was ſeldom the caſe. In ninety-nine caſes out of an hundred, which came under my notice, I could diſtinctly trace the formation of

of the diſeaſe to ſome of the following cauſes, acting ſeparately, or in greater or leſs combination, and inducing indirect or direct debility upon the ſyſtem. The cauſes which induced *indirect* debility were,

1. FATIGUE of body or mind, induced by labour, by walking, riding, watching, or the like. It was labour which excited the diſeaſe ſo univerſally among the lower claſs of people. A long walk often induced it. Few eſcaped it after a day, or even a few hours ſpent in gunning. A hard trotting horſe brought it on two of my patients. Perhaps, riding on horſeback, and in the ſun, was the exciting cauſe of the diſeaſe in moſt of the citizens and ſtrangers who were affected by it in their flight from the city. A fall excited it in a girl, and a ſtroke upon the head excited it in a young man who came under my care. Many people were ſeized with the diſorder in conſequence of their exertions on the night of the 7th of September, in extinguiſhing the fire which conſumed Mr Dobſon's printing-office, and even the leſs violent exerciſe of working the fire engines for the purpoſe of laying the duſt in the ſtreets, added frequently to the number of the ſick.

2. HEAT,

2. Heat, from every cauſe, but more eſpecially the heat of the ſun, was a very common exciting cauſe of the diſorder. It aided the ſtimulus of the contagion in bringing on indirect debility. The regiſter of the weather during the latter end of Auguſt—the whole of September, and the firſt two weeks in October, will ſhew how much the heat of the ſun muſt have contributed to excite the diſeaſe, more eſpecially among labouring people. The heat of common fires, likewiſe became a frequent cauſe of the activity of the contagion, where it had been received into the body; hence the greater mortality of the diſeaſe among bakers, blackſmiths, and hatters, than among any other claſs of people.

3 Intemperance in eating or drinking. A plentiful meal, and a few extra-glaſſes of wine, ſeldom failed of exciting the fever. But where the body was ſtrongly impregnated with the contagion, even the ſmalleſt deviation from the cuſtomary ſtimulus of diet, in reſpect to quality or quantity, rouſed the contagion into action. A ſupper of twelve oyſters in one, and of three, in another of my patients, produced the diſeaſe. Half an ounce of meat rendered the contagion active in a lady, who had lived by my advice for two weeks

weeks upon milk and vegetables. A ſupper of ſallad dreſſed after the French faſhion, excited it in one of Dr Meaſe's patients. It is becauſe men are more prediſpoſed by their conſtitution, and employments, to indirect debility than women, and that young and middle aged perſons are more prediſpoſed to this ſpecies of debility than old people; that more men than women, and more young than old people, were affected by the diſorder.

There were ſeveral exciting cauſes of the diſeaſe, which acted by inducing *direct* debility upon the ſyſtem. It may appear difficult at firſt ſight to explain, how cauſes ſo oppoſite in their nature, as *indirect* and *direct* debility ſhould produce exactly the ſame effect. The difficulty vaniſhes when we reflect, that the abſtraction of one ſtimulus, by accumulating the excitability of the ſyſtem, encreaſes the force of thoſe which remain. The contagion when received into the body, was frequently innocent, until it was aided by the addition of a new, or by the abſtraction of a cuſtomary ſtimulus. The cauſes which acted in the latter way were,

1. Fear. This paſſion debilitates, only becauſe it abſtracts its antagoniſt paſſion of courage. In many people the diſeaſe was excited by a ſud-

den

den paroxiſm of fear; but I ſaw ſome remarkable inſtances where timid people eſcaped the diſeaſe, although they were conſtantly expoſed to it. Perhaps a moderate degree of fear ſerved to balance the tendency of the ſyſtem to indirect debility from the exceſſive ſtimulus of the contagion, and thereby to preſerve it in a ſtate of healthy equilibrium. I am certain that moderate fear did no harm, after the diſeaſe was formed, in thoſe caſes where a morbid exceſs of action, or proſtration of the moving powers from exceſs of ſtimulus, had taken place. It was an early diſcovery of this fact which led me not to conceal from my patients the true name of this fever, when I was called to them on the *day* of their being attacked by it. The fear, co-operated with ſome of my remedies (to be mentioned hereafter) in reducing the morbid excitement of the arterial ſyſtem. A total abſence of fear, in many caſes that came under my notice, did not prevent an attack of the fever.

2. Grief. It was remarkable that the greateſt concentration of the contagion did not produce the diſeaſe in many inſtances in the attendants upon the ſick, while there was a hope of their recovery. The grief which followed the extinction of hope, by death, frequently produced the diſeaſe within a day or two afterwards, and that, not in one perſon only, but often in moſt

of the near relations of the deceaſed. But the diſeaſe was alſo produced by a change in the ſtate of the mind directly oppoſite to that which has been mentioned. Many perſons that attended patients who recovered, were ſeized with the diſorder a day or two after they were relieved from the toils and anxiety of nurſing. The collapſe of the mind from the abſtraction of the ſtimulus of hope and deſire, by their ample gratification, probably produced that debility, and loſs of the equilibrium in the ſyſtem, which favoured the activity of the contagion.

The effects of both the ſtates of mind which have been deſcribed, have been hapily illuſtrated by two facts which are recorded by Dr Jackſon.* He tells us that the garriſons of Savannah and York Town, were both healthy during the ſiege of thoſe towns, but that the former became ſickly as ſoon as the French and American armies retreated from before it, and the latter, immediately after its capitulation.

3. Cold. It will not be neceſſary to pauſe here, to prove that cold is a negative quality, and produced only by the abſence of heat. Its action

* Treatiſe on the Fevers of Jamaica, page 298. = Mr York

= it is page 198 In Dr Rush negative? by Garrison

in exciting the diſeaſe, depended upon the diminution of the neceſſary and natural heat of the body, and thereby ſo far deſtroying the equilibrium of the ſyſtem, as to enable the contagion to produce exceſſive or convulſive motions in the blood veſſels. The night air, even in the warm month of September, was often ſo cool as to excite the diſeaſe where the dreſs and bed clothes were not accommodated to it. It was excited in one caſe by a perſon's only wetting his feet in the month of October, and neglecting afterwards to change his ſhoes and ſtockings. Every change in the weather, that was ſhort of producing froſt, evidently encreaſed the number of ſick people. This was obvious after the 18th and 19th of September, when the mercury fell to 44°, and 45°. The hopes of the city received a ſevere diſappointment upon this occaſion, for I well recollect there was a general expectation that this change in the weather would have checked the diſorder. The ſame encreaſe of the number of ſick, was obſerved to follow the cool weather which ſucceeded the 6th and 7th of October, on which days the mercury fell to 43° and 46°.

It was obſerved that thoſe perſons who were *habitually* expoſed to the cool air, were leſs liable to the diſeaſe than others. I aſcribe it to the *habitual*

bitual impreſſion of the cool night air upon the bodies of the city watchmen, that only four or five of them out of 25 were affected by the diſorder.

After the body had been heated by violent exerciſe, a breeze of cool air ſometimes excited the diſeaſe in thoſe caſes where there had been no change in the temperature of the weather.

4. SLEEP. A great proportion of all who were affected by this fever, were attacked in the night. Sleep induced direct debility, and thereby diſpoſed the contagion which floated in the blood, to act with ſuch force upon the ſyſtem as to deſtroy its equilibrium, and thus to excite a fever. The influence of ſleep as a prediſpoſing, and exciting cauſe was often aſſiſted by the want of bed cloathes, ſuited to the midnight or morning coolneſs of the air.

5. IMMODERATE EVACUATIONS. The efficacy of moderate purging and bleeding in preventing the diſeaſe, led ſome people to uſe thoſe remedies in an exceſs, which both prediſpoſed to the diſeaſe, and excited it. The morbid effects of theſe evacuations, were much aided by fear, for it was this paſſion which perverted the judgment in ſuch

a manner, as to lead to the exceſſive uſe of remedies, which to be effectual, ſhould only be uſed in moderate quantities.

The diſeaſe appeared with different ſymptoms, and in different degrees, in different people. They both varied likewiſe with the weather. In deſcribing the diſeaſe I ſhall take notice of the changes in the ſymptoms, which were produced by changes in the temperature of the air.

The precurſors, or premonitory ſigns of this fever were, coſtiveneſs, a dull pain in the right ſide, defect of appetite, flatulency, perverted taſte, heat in the ſtomach, giddineſs, or pain in the head, a dull—watery—brilliant, yellow or red eye, dim and imperfect viſion, a hoarſneſs, or ſlight ſore throat, low ſpirits, or unuſual vivacity, a moiſture on the hands, a diſpoſition to ſweat at nights, or after moderate exerciſe, or a ſudden ſuppreſſion of night ſweats. The dull eye, and the lowneſs of ſpirits appeared to be the effects of ſuch an exceſs in the ſtimulus of the contagion as to induce indirect debility, while the brilliant eye, and the unuſual vivacity, ſeemed to have been produced by a leſs quantity of the contagion acting as a cordial upon the ſyſtem. More or leſs of theſe ſymptoms, frequently continued for two or three

three days before the patients were confined to their beds, and in ſome people they continued during the whole time of its prevalence in the city, without producing the diſeaſe. I wiſh theſe ſymptoms to be remembered by the reader. They will form the corner ſtone of a ſyſtem which I hope will either eradicate the diſorder altogether, or render it as ſafe as a common intermittent, or as the ſmall-pox when it is received by inoculation.

Frequent as theſe precurſors of the fever were, they were not univerſal. Many went to bed in good health, and awoke in the night with a chilly fit. Many roſe in the morning after regular and natural ſleep, and were ſeized at their work, or after a walk with a ſudden and unexpected attack of the fever. In moſt of theſe caſes the diſeaſe came on with a chilly fit, which afforded by its violence or long duration a tolerable preſage of the favourable iſſue of the diſorder.

Upon entering a ſick room where a patient was confined by this fever, the firſt thing which ſtruck the eye of a phyſician, was the countenance. It was as much unlike that which is exhibited in the common bilious fever, as the face of a wild, is unlike the face of a mild domeſtic animal. The eyes were ſad, watery, and ſo inflamed in ſome

caſes as to reſemble two balls of fire. Sometimes they had a moſt brilliant or ferocious appearance. A redneſs or yellowneſs in them, was nearly univerſal: but I ſaw a few violent caſes in which no change could be diſcovered in the colour of the eyes. The face was ſuffuſed with blood, or of a duſky colour, and the whole countenance was downcaſt and clouded. After the 10th of September, when a determination of blood to the brain became univerſal, there was a preternatural dilatation of the pupil. Sighing attended in almoſt every caſe. The ſkin was dry, and frequently of its natural temperature. Theſe were the principal ſymptoms which diſcovered themſelves to the eye, and hand of a phyſician. The anſwers to the firſt queſtions propoſed upon viſiting a patient, were calculated to produce a belief in the mind of a phyſician, that the diſeaſe under which the patient laboured, was not the prevailing malignant epidemic. I did not for many weeks meet with a dozen patients, who acknowledged that they had any other indiſpoſition than a common cold, or a ſlight remitting, or intermitting fever. I was particularly ſtruck with this ſelf deception in many perſons who had nurſed relations that had died with the yellow fever, or who had been expoſed to its contagion in families, or neighbourhoods, where it had prevailed for days and even weeks

with

with great mortality. I ſhall hereafter trace a part of this diſpoſition in the ſick to deceive themſelves, to the influence of certain publications which appeared ſoon after the diſeaſe became epidemic in the city.

In the further hiſtory of this fever, I ſhall deſcribe its ſymptoms as they appeared.

I. In the ſanguiferous ſyſtem.

II. In the liver, lungs, and brain.

III. In the alimentary canal; in which I include the ſtomach as well as the bowels.

IV. In the ſecretions and excretions.

V. In the nervous ſyſtem.

VI. In the ſenſes and appetites.

VII. In the lymphatic and glandular ſyſtem.

VIII. Upon the ſkin.

IX. In the blood.

After having finiſhed this detail, I ſhall mention ſome general characters of the diſeaſe, and afterwards ſubdivide it into claſſes, according to its degrees and duration.

I. The BLOOD VESSELS (and not the ſtomach and bowels according to Dr Warren) are the "ſeat and throne" of this as well as of all other fevers. I have publicly taught for ſeveral years, that a fever is occaſioned by a convulſion in the arterial ſyſtem. When the epidemic, which we are now conſidering, came on with a full, tenſe, and quick pulſe, this convulſion was very perceptible; but it frequently came on with a weak pulſe; often without any preternatural frequency or quickneſs, and ſometimes ſo low as not to be perceived without preſſing the artery at the wriſts. In many caſes the pulſe intermitted after the 4th, in ſome after the 5th, and in others after the 14th, ſtroke. Theſe intermiſſions occurred in ſeveral perſons who were infected, but who were not confined by the fever. They likewiſe continued in ſeveral of my patients for many days after their recovery. This was the caſe in particular in Mrs Clymer, Mrs Palmer's ſon William, and in a ſon of Mr William Compton. In ſome there was a preternatural flowneſs of the pulſe. It beat 44 ſtrokes in a minute in Mr B. W. Morris—48 in Mr Thos. Wharton,

Wharton, jun. and 64 in Mr William Sanſom, at a time when they were in the moſt imminent danger. Dr Phyſick informed me that in one of his patients the pulſe was reduced in frequency to 30 ſtrokes in a minute. All theſe different ſtates of the pulſe have been taken notice of by authors who have deſcribed peſtilential fevers.* They have been improperly aſcribed to the abſence of fever: I would rather ſuppoſe that they are occaſioned by the ſtimulus of the contagion acting, upon the arteries with too much force to admit of their being excited into quick and convulſive motions. The remedy which removed it (to be mentioned hereafter) will render this explanation of its cauſe ſtill more probable. Milton deſcribes a darkneſs, from an exceſs of light. In like manner, we obſerve in this ſmall intermitting and ſlow pulſe, a deficiency of ſtrength from an exceſs of force applied to it. In every caſe of it which came under my notice, it was likewiſe tenſe or chorded. This ſpecies of pulſe occurred chiefly in the month of Auguſt, and in the firſt ten days in September. I had met with it formerly in a ſporadic caſe of yel-

* Vergaſca, Sorbait, and Boate in Haller's Biliotheca, Medicinæ, Vol. iii. alſo by Dr Stubbs in the Philoſophical Tranſactions, and Riverius in his treatiſe de febre peſtilenti.

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low fever. It was new to all of my pupils. One of them, Mr Waſhington, gave it the name of the "undeſcribable pulſe." It aided in determining the ſpecific nature of this fever before the common bilious remittent diſappeared in the city. For a while, I aſcribed this peculiarity in the pulſe, more eſpecially its *ſlowneſs*, to an affection of the brain only, and ſuſpected that it was produced by what I have taken the liberty elſewhere to call the *phrenicula*, or inflammatory ſtate of the internal dropſy of the brain, and which I have remarked to be an occaſional ſymptom and conſequence of remitting fever*. I was the more diſpoſed to adopt this opinion, from perceiving this ſlow and intermitting pulſe more frequently in children than in adults. Impreſſed with this idea, I requeſted Mr Coxe, one of my pupils, to aſſiſt me in examining the ſtate of the eye. For two days we diſcovered no change in it, but on the third day after we began to inſpect the eyes, we both perceived a preternatural dilatation of the pupils in different patients; and we ſeldom afterwards ſaw an eye in which it was abſent. In Dr Say it was attended by a ſquinting, a ſymptom which marks a high degree of a morbid affection of the brain. Had this ſlowneſs or intermiſſion in the pulſe occurred only after ſigns

* Medical Inquiries and Obſervations, Vol. ii.

of

of inflammation or congeſtion had appeared in the brain, I ſhould have ſuppoſed that it had been derived wholly from that cauſe; but I well recollect having felt it ſeveral days before I could diſcover the leaſt change in the pupil of the eye. I am forced therefore to call in the operation of another cauſe, to aſſiſt in accounting for this ſtate of the pulſe, and this I take to be a ſpaſmodic affection, accompanied with preternatural dilatation or contraction of the heart. Lieutaud mentions this ſpecies of pulſe in ſeveral places, as occurring with an undue enlargement of that muſcle*. Dr Ferriar deſcribes a caſe, in which a low, irregular, intermitting and hardly perceptible pulſe, attended a morbid dilatation of the heart†. In a letter I lately received from Mr Hugh Ferguſon, a ſtudent of medicine in the college of Edinburgh, written from Dublin, during the time of a viſit to his father, and dated September 30th, 1793, I find a fact which throws additional light upon this ſubject. "A caſe (ſays my young correſpondent) where a remarkable intermiſſion of pulſe was obſerved, occurred in this city laſt year. A gentleman of the medical profeſſion, middle aged, of a

* Hiſtoria Anatomica Medica, Vol. ii. Obſ. 405. 418. 423. 510.

† Medical Hiſtories and Reflections, p. 150.

delicate

delicate habit of body, and who had formerly ſuffered phthiſical attacks was attacked with the acute rheumatiſm. Some days after he was taken ill, he complained of uncommon fulneſs, and a very peculiar kind of ſenſation about the præcordia, which it was judged proper to relieve by copious blood-letting. This being done, the uneaſineſs went off. It returned however three or four times, and was as often relieved by bleeding. During each of his fits (if I may call them ſo), the patient experienced an almoſt total remiſſion of his pains in his limbs; but they returned with equal or greater violence after blood-letting. During the fit there was an intermiſſion of the pulſe (the firſt time) of no leſs than thirteen ſtrokes. It was when beating full, ſtrong, and ſlow. The third intermiſſion was of nine ſtrokes. The gentleman ſoon recovered, and has enjoyed good health for ten months paſt. The opinion of ſome of his phyſicians was, that the heart was affected as a muſcle, by the rheumatiſm, and alternated with the limbs."

I am the more inclined to believe the peculiarity in the pulſe which has been mentioned in the yellow-fever, aroſe in part from a ſpaſmodic affection of the heart, from the frequency of an uncommon palpitation of this muſcle, which I diſcovered in

in this diſorder, more eſpecially in old people. The diſpoſition likewiſe to ſyncope and ſighing, which ſo often occurred, can be explained upon no other principle than inflammation, ſpaſm, dilatation, or congeſtion in the heart. After the 10th of September this undeſcribable or *ſulky* pulſe (for by the latter epithet I ſometimes called it) became leſs obſervable; and in proportion as the weather became cool, it totally diſappeared. It was gradually ſucceeded by a pulſe, full, tenſe, quick, and as frequent as in pleuriſy or rheumatiſm. It differed however from a pleuretic or rheumatic pulſe, in imparting a very different ſenſation to the fingers. No two ſtrokes ſeemed to be exactly alike. Its action was of a *hobbling* nature. It was at this time ſo familiar to me, that I think I could have diſtinguiſhed the diſeaſe by it, without ſeeing the patient. It was remarkable, that this pulſe attended the yellow fever even when it appeared in the mild form of an intermittent, and in thoſe caſes where the patients were able to walk about, or go abroad. It was nearly as *tenſe* in the remiſſions and intermiſſions of the fever, as it was in the exacerbations. It was an alarming ſymptom, and when the only remedy which was effectual to remove it, was neglected, ſuch a change in the ſyſtem was induced, as frequently brought on death in a few days.

This

This change in the pulſe, from extreme lowneſs, to fulneſs and activity, appeared to be owing to the diminution of the heat of the weather, which by its ſtimulus, added to that of the contagion, had induced thoſe ſymptoms of indirect debility in the pulſe, which have been mentioned.

The pulſe moſt frequently leſſened in its fulneſs, and became gradually weak, frequent, and imperceptible before death; but I met with ſeveral caſes in which it was full, active, and even tenſe in the laſt hours of life.

Hemorrhagies belong to the ſymptoms of this fever as they appeared in the ſanguiferous ſyſtem. They occurred in the beginning of the diſorder chiefly from the noſe and uterus. Sometimes but a few drops of blood diſtilled from the noſe. The menſes were unuſual in their quantity, when they appeared at their ſtated periods, but they often came on a week or two before the uſual time of their appearance. I ſaw one caſe of an hemorrhage from the lungs on the firſt day of the fever, which was miſtaken for a common hemoptyſis. As the diſeaſe advanced, the diſcharges of blood became more univerſal. They occurred from the gums, ears, ſtomach, bowels, and urinary paſſages. Drops of blood iſſued from the inner Canthus

thus of the left eye of Mr Joſiah Coates. Dr Woodhouſe attended a lady who bled from the holes in her ears, which had been made by ear rings. Many bled from the orifices which had been made by bleeding, ſeveral days after they appeared to have been healed, and ſome from wounds which had been made in veins in unſucceſsful attempts to draw blood. Theſe laſt hemorrhages were very troubleſome, and in ſome caſes precipitated death.

II. I come now to mention the ſymptoms of this fever as they appeared in the LIVER, the LUNGS, and the BRAIN. From the hiſtories which I had read of this diſorder, I was early led to examine the ſtate of the LIVER, but I was ſurpriſed to find ſo few marks of hepatic affection. I met with but two caſes in which the patient could lie only on the right ſide. Many complained of a dull pain in the region of the liver, but very few complained of that foreneſs to the touch, about the pit of the ſtomach which is taken notice of by authors, and which was univerſal in the yellow fever in 1762. In proportion as the cool weather advanced, a preternatural determination of the blood took place chiefly to the lungs and brain. Many were affected with pneumonic ſymptoms,

and ſome appeared to die of ſudden effuſions of blood or ſerum in the lungs. It was an unexpected effuſion of this kind which put an end to the life of Mrs Keppele after ſhe had exhibited hopeful ſigns of a recovery.

I ſaw one perſon who recovered from an affection of the lungs, by means of a copious expectoration of yellow phlegm and mucus. But the BRAIN was principally affected with morbid congeſtion in this diſorder. It was indicated by the ſuffuſion of blood in the face, by the redneſs of the eyes, by a dilatation of the pupils, by the pain in the head, by the hemorrhagies from the noſe and ears, by the ſickneſs, or vomiting, and by an almoſt univerſal coſtive ſtate of the bowels. I wiſh to impreſs the reader with theſe facts, for they formed one of the ſtrongeſt indications for the uſe of the remedies which I adopted for the cure of this diſorder. It is difficult to determine the exact ſtate of theſe viſcera in every caſe of bilious and yellow fever. Inflammation certainly takes place in ſome caſes, and internal hemorrhagies in others; but I believe the moſt frequent affection of theſe viſcera conſiſts in a certain morbid accumulation of blood in them, which has been happily called by Dr. Clark an *engorgement* or choaking of the blood veſſels. I

believe further with Dr Clark* and Dr Balfour†, that death in moſt caſes in bilious fevers is the effect of theſe morbid congeſtions, and wholly unconnected with direct debility or a ſuppoſed putrefaction in the blood. It is true the diſſections of Dr. Phyſick and Dr. Cathrall diſcovered no morbid appearances in either of the viſcera which have been mentioned, but it ſhould be remembered, that theſe diſſections were made early in the diſorder. Dr. Annan attended the diſſection of a brain of a patient who died at Buſh-hill ſome days afterwards, and obſerved the blood-veſſels to be unuſually turgid. In thoſe caſes where congeſtion only takes place, it is as eaſy to conceive that all morbid appearances in the brain may ceaſe after death, as that the ſuffuſion of blood in the face ſhould diſappear after the retreat of the blood from the extremities of the veſſels in the laſt moments of life. It is no new thing for morbid affections of the brain to leave either ſlender, or no marks of diſeaſe after death. Dr. Quin has given a diſſection of the brain of a child that died with all the ſymptoms of hydrocephalus internus, and yet nothing was diſcovered in the brain but a ſlight turgeſcence of its blood veſſels. Dr. Gir-

* Vol. i. p. 168.

† Treatiſe on the Inteſtinal remitting Fever, p. 125.

dleſtone ſays, no injury appeared in the brains of thoſe perſons who died of the ſymptomatic apoplexy, which occurred in a ſpaſmodic diſeaſe which he deſcribes in the Eaſt Indies; and Mr. Clark informs us, that the brain was in a natural ſtate in every caſe of death from puerperal fever, notwithſtanding it ſeemed to be affected in many caſes ſoon after the attack of that diſorder*.

I wiſh it to be remembered here, that the yellow fever like all other diſeaſes is influenced by climate and ſeaſon. The determination of the fluids is ſeldom the ſame in different years, and I am ſure it varied with the weather in the diſeaſe which I am now deſcribing. Dr. Jackſon ſpeaks of the head being moſt affected in the Weſt India fevers in *dry* ſituations. Dr. Hillary ſays, that there was an unuſual determination of the blood towards the brain after a *hot* and *dry* ſeaſon in the fevers of Barbadoes in the year 1753, and Dr. Ferriar in his account of an epidemic jail fever in Mancheſter in 1789, 1790, informs us, that as ſoon as froſt ſet in, a delirium became a more frequent ſymptom of that diſorder, than it had been in more temperate weather.

* Eſſay on the Epidemic Diſeaſe of Lying-in Women, of the years 1787 and 1788. p. 34.

III.

III. The STOMACH and BOWELS were affected in many ways in this fever. The diſeaſe ſeldom appeared without nauſea or vomiting. In ſome caſes, they both occurred for ſeveral days, or a week before they were accompanied by any fever. This was more frequently the caſe, where the diſeaſe was taken by exhalation from the putrid coffee, than by contagion. Sometimes a pain, known by the name of gaſtrodynia, uſhered in the diſeaſe. The ſtomach was ſo extremely irritable as to reject drinks of every kind. Sometimes green or yellow bile was rejected on the firſt day of the diſorder, by vomiting; but I much oftener ſaw it continue for two days without diſcharging any thing from the ſtomach, but the drinks which were taken by the patient. If the fever in any caſe came on without vomiting, or if it had been checked by remedies that were ineffectual, to remove it altogether, it generally appeared, or returned, on the 4th or 5th day of the diſorder. I dreaded this ſymptom on thoſe days, for although it was not always the forerunner of death, yet it generally rendered the recovery more difficult and tedious. In ſome caſes the vomiting was more or leſs conſtant from the beginning to the end of the diſorder, whether it terminated in life or death.

The vomiting which came on about the 4th or 5th day, was accompanied with a burning pain in the region of the ſtomach. It produced great anxiety and toſſing of the body from one part of the bed to another. In ſome caſes this painful burning occurred before any vomiting had taken place. Drinks were now rejected from the ſtomach ſo ſuddenly as often to be diſcharged over the hand that lifted them to the head of the patient. The contents of the ſtomach (to be mentioned hereafter) were ſometimes thrown up with a convulſive motion, that propelled them in a ſtream to a great diſtance, and in ſome caſes all over the clothes of the by-ſtanders.

Flatulency was an almoſt univerſal ſymptom in every ſtage of this diſorder. It was very diſtreſſing in many caſes. It occurred chiefly in the ſtomach.

The BOWELS were generally coſtive, and in ſome patients, as obſtinately ſo as in the dry gripes. In ſome caſes there was all the pain and diſtreſs of a bilious colic, and in others, the teneſmus, and mucous and bloody diſcharges of a true dyſentery. A diarrhœa introduced the diſeaſe in a few perſons, but it was chiefly in thoſe who had been previouſly indiſpoſed with weak bowels. A pain-

painful tenſion of the abdomen took place in many, accompanied in ſome inſtances by a dull, and in others, by an acute pain in the lower part of the belly.

The vomiting and coſtiveneſs in the firſt ſtage of this fever, I believe were occaſioned chiefly by the morbid ſtate of the brain. But the vomiting and burning in the ſtomach, and the pain in the bowels which occurred on the 4th and 5th days, appeared to be the effects of inflammation induced in part by the effuſion of acrid bile into the alimentary canal, and in part by a change in the action of the coats of the ſtomach and bowels, induced by effuſions of ſerum or red blood, ſimilar to thoſe which take place on the ſkin in malignant fevers, and which are known by the name of petechiæ. I am the more diſpoſed to aſcribe a large portion of the inflammation, eroſions, and mortifications, which have been obſerved after death in the ſtomach and bowels in this fever, to the latter cauſe, from the diſcovery which has been made of petechiæ and carbuncles in the bowels in the plague, exactly ſimilar to thoſe which are found on the external parts of the body in that diſorder*.

* Haller's Biliotheca Medicinæ, vol. iv. p. 375.

IV. I come now to deſcribe the ſtate of the SECRETIONS and EXCRETIONS, as they appeared in different ſtages of this fever.

There appeared to be a preternatural ſecretion and excretion of bile. It was diſcharged from the ſtomach and bowels in large quantities, and of very different qualities and colours.

1. On the firſt and ſecond days of the diſorder, many patients puked from half a pint to nearly a quart of green or yellow bile. This was generally a favourable ſign, as it ſhewed the biliary ducts to be open. Four caſes came under my notice in which black bile was diſcharged on the *firſt* day. Three of theſe patients recovered. I aſcribed their recovery, to the bile not having as yet acquired acrimony enough to inflame, or corrode the ſtomach.

2. There was frequently on the 4th or 5th day, a diſcharge of matter from the ſtomach, reſembling coffee impregnated with its grounds. This was always an alarming ſymptom. I believed it at firſt to be a modification of vitiated bile, but I was led afterwards by its reſemblance to the urine (to be described hereafter) to ſuſpect that it was produced by a morbid ſecretion in the liver, and effuſed from

from it into the ſtomach. Many recovered who diſcharged this coffee-coloured matter.

3. Towards the cloſe of the diſeaſe, there was a diſcharge of matter of a deep black or pale colour, from the ſtomach. Flakey ſubſtances frequently floated in the baſon or chamber-pot upon the ſurface of this matter. It appeared to be bile in a highly acrid ſtate. That the bile may become extremely acrid in this ſtage of the diſorder is evident from ſeveral obſervations and experiments. Dr Phyſick's hand was inflamed in conſequence of its being wetted by bile in this ſtate, in diſſecting a dead body. Dr Arthaud examined the body of a ſoldier who died of the yellow fever at the French Cape on the 16th of May 1789, whoſe bile imparted a green colour*, to the tincture of radiſhes. I am not certain that the black matter, which was diſcharged in the laſt ſtage of the diſorder, was always vitiated or acrid bile. It was probably in ſome caſes, the matter which was formed in conſequence of the mortification of the ſtomach. The matter which was diſcharged from carbuncles on the ſkin, as I ſhall ſay hereafter, was always of a dark colour. Several diſſections of perſons who have died of the yellow fever, have ſhewn abſceſſes in the ſtomach, not unlike external carbuncles.

* Roſier's Journal for Jan. 1790. vol. xxxvi. p. 380.

May

May not the black matter in ſome caſes be derived from theſe internal carbuncle-like abſceſſes?

4. There was frequently diſcharged from the ſtomach in the cloſe of the diſeaſe, a large quantity of grumous blood, which exhibited a dark colour on its outſide, reſembling that of ſome of the matters which have been deſcribed, and which I believe was frequently miſtaken for what is commonly known by the name of the *black vomiting*. Several of my patients did me the honour to ſay, I had cured them, after that ſymptom of approaching diſſolution had made its appearance; but I am inclined to believe, dark-coloured blood only, or the coffee coloured matter, was miſtaken for the matters which conſtitute the fatal black vomiting. I except here the black diſcharge before mentioned, which took place in three caſes on the firſt day of the diſorder. This I have no doubt was bile, but it had not acquired its greateſt acrimony, and it was diſchaged before mortification, or even inflammation could have taken place in the ſtomach. Several perſons died without a black vomiting of any kind.

Along with all the diſcharges from the ſtomach which have been deſcribed, there was occaſionally a large worm, and frequently large quantities of [illegible] tough phlegm.

The

The colour, quality, and quantity, of the *fæces* depended very much upon the treatment of the diſeaſe. Where active purges had been given, the ſtools were copious, fœtid, and of a black or dark colour. Where they were ſpontaneous, or excited by weak purges, they had a more natural appearance. In both caſes, they were ſometimes of a green, and ſometimes of an olive colour. Their ſmell was more or leſs fœtid, according to the time in which they had been detained in the bowels. I viſited a lady who had paſſed ſeveral days without a ſtool, and who had been treated with tonic remedies. I gave her a purge, which in a few hours procured a diſcharge of fæces ſo extremely fœtid, that they produced fainting in an old woman who attended her. The acrimony of the fæces was ſuch as to excoriate the rectum, and ſometimes to produce an extenſive inflammation all around its external termination. The quantity of the ſtools produced by a ſingle purge was in many caſes very great. They could be accounted for only by calling in the conſtant, and rapid formation of them, by preternatural effuſions of bile into the bowels.

I attended one perſon, and heard of two others, in whom the ſtools were as white as in the jaundice. I ſuſpected in theſe caſes, the bile to be ſo impacted

impacted in the gall bladder, or in its ducts, as not to be discharged in a sufficient quantity to colour the fœces. Large round worms were frequently discharged with the stools.

The *urine* was in some cases plentiful, and of a high colour. It was at times clear, and at other times turbid. About the 4th or 5th day it sometimes assumed a dark colour, and resembled strong coffee. This colour continued in one instance for several days after the patient recovered. In several cases, the urine had a fœtid smell. In some, the discharge was accompanied by a burning pain resembling that which takes place in a gonorrhœa. I met with one case in which this burning came on only in the evening, with the exacerbation of the fever, and went off with its remission in the morning.

A total deficiency of the urine took place in many people for a day or two, without pain. Dr Sydenham takes notice of the same symptom in the highly inflammatory small pox*. It generally accompanied, or portended great danger. I suspected that it was connected in this disease, as in the hydrocephalus internus, with a morbid state

* Wallis's Edition. Vol. i. p. 197.

of

of the brain. I heard of one caſe in which there was a *ſuppreſſion* of urine, which could not be relieved without the uſe of the catheter.

A young man was attended by Mr. Fiſher, one of my pupils, who diſcharged ſeveral quarts of limpid urine juſt before he died.

Dr. Arthaud informs us in the hiſtory of the diſſection before quoted, that the urine after death imparted a green colour to the tincture of radiſhes.

Many people were relieved by copious *ſweats* on the firſt day of the diſorder. They were in ſome inſtances ſpontaneous, and in others, they were excited by diluting drinks, or by ſtrong purges. Theſe ſweats were often of a yellow colour, and ſometimes had an offenſive ſmell. They were in ſome caſes cold, and attended at the ſame time with a full pulſe. In general, the ſkin was dry in the beginning as well as in the ſubſequent ſtages of the diſorder. I ſaw but few inſtances of the diſeaſe terminating like common fevers, by ſweat after the third day. I wiſh this fact to be remembered by the reader, for it laid part of the foundation of my method of curing this fever.

There

There was in ſome caſes a preternatural ſecretion and excretion of *mucus* from the glands of the throat. It was diſcharged by an almoſt conſtant hawking and ſpitting. All who had this ſymptom recovered.

The TONGUE was in every caſe moiſt, and of a white colour on the firſt and ſecond days of the fever. As the diſeaſe advanced, it aſſumed a red colour, and a ſmooth ſhining appearance. It was not quite dry in this ſtate. Towards the cloſe of the fever, a dry black ſtreak appeared in its middle, which gradually extended to every part of it. Few recovered after this appearance on the tongue took place.

V. In the NERVOUS SYSTEM the ſymptoms of the fever were different according as it affected the brain—the muſcles—the nerves—or the mind. The ſudden and violent action of the contagion, induced apoplexy in ſeveral people. In ſome, it brought on ſyncope, and in others, convulſions in every part of the body. The apoplectic caſes generally proved fatal, for they fell chiefly upon hard drinkers. Perſons affected by ſyncope, or convulſions, ſometimes fell down in the ſtreets. Two caſes of this kind happened near my houſe.

One

One of them came under my notice. He was ſuppoſed by the byſtanders to be drunken, but his countenance, and convulſive motions, ſoon convinced me that this was not the caſe.

A coma was obſerved in ſome people, or an obſtinate wakefulneſs in every ſtage of the diſorder. The latter ſymptom moſt frequently attended the convaleſcence. Many were affected with immobility, or numbneſs in their limbs.

Theſe ſymptoms were conſtant, or temporary, according to the nature of the remedies which were made uſe of, to remove them. They extended to all the limbs, in ſome caſes, and only to a part of them in others. In ſome, a violent cramp both in the arms, and legs attended the firſt attack of the fever. I met with one caſe in which there was a difficulty of ſwallowing from a ſpaſmodic affection of the throat, ſuch as occurs in the locked-jaw. I met with two caſes of palſey in the limbs, which continued for many months, after the diſeaſe left the city.

A hiccup attended the laſt ſtage of this diſorder, but I think leſs frequently than the laſt ſtage of the common bilious fever. I ſaw only five caſes of recovery where this ſymptom took place.

There

There was in ſome inſtances a deficiency of ſenſibility, but in others a degree of it, extending to every part of the body, which rendered the application of common rum to the ſkin, and even the leaſt motion of the limbs painful.

I was ſurpriſed to obſerve the laſt ſtage of this fever to exhibit ſo few of the ſymptoms of the common typhus or nervous fever. Tremors of the limbs and twitchings of the tendons were uncommon. They occurred only in thoſe caſes in which there was a prediſpoſition to nervous diſeaſes, and chiefly in the convaleſcent ſtate of the diſorder.

While the muſcles and nerves in many caſes exhibited ſo many marks of preternatural weakneſs, in ſome, they appeared to be affected with preternatural excitement. Hence patients in the cloſe of the diſorder often roſe from their beds, walked acroſs their rooms, or came down ſtairs, with as much eaſe as if they had been in perfect health. I loſt a patient in whom this ſtate of morbid ſtrength occurred to ſuch a degree, that he ſtood up before his glaſs, and ſhaved himſelf on the day in which he died.

The mind ſuffered with the morbid ſtates of the brain and nerves. A delirium was a common ſymptom. It alternated in ſome caſes with the exacerbations

exacerbations and remiſſions of the fever. In ſome, it continued without a remiſſion, until a few hours before death. Many, however, paſſed through the whole courſe of the diſeaſe without the leaſt derangement in their ideas, even where there were evident ſigns of a morbid congeſtion in the brain. Some were ſeized with maniacal ſymptoms. In theſe, there was an apparent abſence of fever. Such was the degree of this mania in one man, that he ſtripped of his ſhirt, left his bed, and ran through the ſtreets with no other covering than a napkin on his head, at 8 o'clock at night, to the great terror of all who met him. The ſymptoms of mania occurred moſt frequently towards the cloſe of the diſeaſe, and ſometimes continued for many days, and weeks, after all the febrile ſymptoms had diſappeared.

The temper was much affected in this fever. There were few, in whom it did not produce great depreſſion of ſpirits. This was the caſe in many, in whom pious habits, had ſubdued the fear of death. In ſome the temper became very irritable. Two caſes of this kind came under my notice, in perſons who in good health, were diſtinguiſhed for uncommon ſweetneſs of diſpoſition and manners.

I obſerved in ſeveral perſons the operations of the underſtanding to be unimpaired, throughout the

the whole courſe of the fever, who retained no remembrance of any thing that paſſed in their ſickneſs. My pupil Mr Fiſher furniſhed a remarkable example of this correctneſs of underſtanding with a ſuſpenſion of memory. He neither ſaid, nor did any thing during his illneſs, that indicated the leaſt derangement of mind, and yet he recollected nothing that paſſed in his room, except my viſits to him. His memory awakened upon my taking him by the hand on the morning of the 6th day of his diſorder, and congratulating him upon his eſcape from the grave.

In ſome, there was a weakneſs, or total defect of memory for ſeveral weeks after their recovery, Dr Woodhouſe informed me that he had met with a woman who after ſhe had recovered, could not recollect her own name.

Perhaps it would be proper to rank that ſelf-deception with reſpect to the nature and danger of the diſeaſe which was ſo univerſal, among the inſtances of derangement of mind.

The pain which attended the diſorder was different according as the ſyſtem was affected by direct or indirect debility. In thoſe caſes in which the ſyſtem ſunk under the violent impreſſion of the contagion, there was little or no pain. In

proportion as the ſyſtem was relieved from this oppreſſion it recovered its ſenſibility. The pain in the head, was acute and diſtreſſing. It affected the eye balls in a peculiar manner. A pain extended in ſome caſes from the back of the head, down the neck. The ears were affected in ſeveral perſons with a painful ſenſation, which they compared to a ſtring drawing their two ears together through the brain. The ſides, and the regions of the ſtomach, liver and bowels, were all, in different people, the ſeats of either dull or acute pains. The ſtomach towards the cloſe of the diſorder was affected with a burning or ſpaſmodic pain of the moſt diſtreſſing nature. It produced in ſome caſes great anguiſh of body and mind. In others it produced cries and ſhrieks which were often heard on the oppoſite ſide of the ſtreets to where the patients lay. The back ſuffered very much in this diſorder. An acute pain extended in ſome caſes from the back, to one or both thighs. The arms and legs ſympathized with every other part of the body. One of my patients, upon whoſe limbs the diſeaſe fell, with its principal force, ſaid that his legs felt as if they had been ſcraped with a ſharp inſtrument. The ſympathy of friends with the diſtreſſes of the ſick, extended to a ſmall part of their miſery, when it did not include their ſufferings from pain. One

of the deareſt friends I ever loſt by death, declared in the height of her illneſs, that "no one knew the pains of a yellow fever, but thoſe who felt them."

VI. The *ſenſes* and *appetites* exhibited ſeveral marks of the univerſal ravages of this fever upon the body. A deafneſs attended in many caſes, but it was not often as in the nervous fever, a favourable ſymptom. A dimneſs of ſight, was very common in the beginning of the diſeaſe. Many were affected with temporary blindneſs. In ſome there was a loſs of ſight in conſequence of gutta ſerena, or a total deſtruction of the ſubſtance of the eye. There was in many perſons a foreneſs to the touch, which extended all over the body. I have often obſerved this ſymptom to be the fore-runner of a favourable iſſue of a nervous fever, but it was leſs frequently the caſe in this diſorder.

The *thirſt* was moderate or abſent in ſome caſes, but it occurred in the greateſt number of perſons whom I ſaw in this fever. Sometimes it was very intenſe. One of my patients who ſuffered by an exceſſive draught of cold water, declared juſt before he died, that "he could drink up the Delaware." It was always an alarming ſymptom, when the thirſt came on in this extravagant degree

gree in the laſt ſtage of the diſorder. In the beginning of the fever, it generally abated upon the appearance of a moiſt ſkin. Water, was preferred to all other drinks.

The *appetite* for food was impaired in this, as in all other fevers, but it returned much ſooner than is common after the patient began to recover. Coffee was reliſhed in the remiſſions of the fever, in every ſtage of the diſorder. So keen was the appetite for ſolid, and more eſpecially for animal food, after the ſolution of the fever, that many ſuffered from eating aliment that was improper from its quality or quantity. There was a general diſreliſh for wine, but malt liquors were frequently grateful to the appetite.

Many people retained a reliſh for tobacco much longer after they were attacked by this fever, and acquired a reliſh for it much ſooner after they began to recover, than are common in any other febrile diſeaſe. I met with one caſe in which my patient, who was ſo ill as to require two bleedings, continued to chew tobacco through every ſtage of his fever.

The convaleſcence from this diſorder was marked in ſome inſtances, by a ſudden revival of the

venereal appetite. Several weddings took place in the city between perſons who had recovered from the fever. Twelve took place among the convaleſcents in the hoſpital at Buſh-hill. I wiſh I could add, that the paſſion of the ſexes for each other, among thoſe ſubjects of public charity, was always gratified only in a lawful way. Delicacy forbids a detail of the ſcenes of debauchery which were practiſed near the hoſpital in ſome of the tents, which had been appropriated for the reception of convaleſcents. It is not peculiar to the yellow fever to produce this morbid excitability of the venereal appetite. It was produced in a much higher degree by the plague which raged in Meſſina in the year 1743.

VII. The *lymphatic* and *and glandular ſyſtem* did not eſcape without ſome ſigns of the infection of this diſeaſe. I met with three caſes of ſwellings in the inguinal, two in the parotid, and one in the cervical glands: all theſe patients recovered without a ſuppuration of their ſwellings. They were extremely painful in one caſe in which no redneſs or inflammation appeared. In the others, there was conſiderable inflammation, and but little pain.

In one of the caſes of inguinal buboes, the whole force of the diſeaſe ſeemed to be collected into the lymphatic

lymphatic ſyſtem. The patient walked about, and had no fever nor pain in any part of his body, except in his groin. In another caſe which came under my care, a ſwelling and pain extended from the groin along the ſpermatic cord into one of the teſticles. Theſe glandular ſwellings were not peculiar to our late epidemic. They occurred in the yellow fever of Jamaica as deſcribed by Dr. Williams, and always with a happy iſſue of the diſorder*. A ſimilar concentration of the contagion of the plague in the lymphatic glands, is taken notice of by Dr Patrick Ruſſel.

VIII. The SKIN exhibited many marks of this fever. It was preternaturally warm in ſome caſes, but it was often preternaturally cool. In ſome there was a diſtreſſing coldneſs in the limbs for two or three days. The yellow colour from which this fever has derived its name, was not univerſal. It ſeldom appeared where purges had been given in ſufficient doſes. The yellowneſs rarely appeared before the third, and generally about the fifth or ſeventh day of the fever. Its early appearance always denoted great danger. It ſometimes appeared firſt on the neck and breaſt, inſtead of the eyes. In one of my patients it diſcovered itſelf firſt behind one of his ears, and on the crown of his head,

* Eſſay on the Bilious or Yellow Fever, p. 35.

which had been bald for ſeveral years. The remiſſions and exacerbations of the fever ſeemed to have an influence upon this colour, for it appeared and diſappeared altogether, or with fainter or deeper ſhades of yellow, two or three times in the courſe of the diſorder. The eyes ſeldom eſcaped a yellow tinge; and yet I ſaw a number of caſes in which the diſeaſe appeared with uncommon malignity and danger, without the preſence of this ſymptom. Two very different cauſes have been ſuppoſed to produce this yellow colour of the ſkin. By ſome it has been attributed to the diſſolution of the blood; but I ſhall ſay hereafter, that the blood was ſeldom diſſolved in this fever. The yellow colour, moreover, occurred in thoſe caſes where the blood exhibited an inflammatory cruſt, and it continued in many perſons for five or ſix weeks after their recovery. It was likewiſe abſent in ſome caſes in which the blood was diſſolved. From theſe facts it is probable, that the yellowneſs was the effect of an abſorption and mixture of bile with the blood.

There was a *clay-coloured* appearance in the face in ſome caſes, which was very different from the yellow colour which has been deſcribed. It occurred in the laſt ſtage of the fever, and in no inſtance did I ſee a recovery after it.

There

There were eruptions of various kinds on the ſkin, each of which I ſhall briefly deſcribe.

1. I met with two caſes of an eruption on the ſkin, reſembling that which occurs in the ſcarlet fever. Dr Hume ſays, pimples often appear on the pit of the ſtomach in the yellow fever of Jamaica. I examined the external region of the ſtomach in many of my patients, without diſcovering this ſymptom.

2. I met with one caſe, in which there was an eruption of watery bliſters, which after burſting, ended in deep, black ſores.

3. There was an eruption about the mouth in many people, which ended in ſcabs, ſimilar to thoſe which take place in the common bilious fever. They always afforded a proſpect of a favourable iſſue of the diſeaſe.

4. Many perſons had eruptions which reſembled moſchetto bites. They were red and circumſcribed. They appeared chiefly on the arms, but they ſometimes extended to the breaſt. Like the yellow colour of the ſkin, they appeared and diſappeared two or three times in the courſe of the diſorder.

5. Petechiæ were common in the latter ſtage of the fever. They ſometimes came on in large, and at other times in ſmall red blotches; but they ſoon acquired a dark colour. In moſt caſes they were the harbingers of death.

6. Several caſes of carbuncles, ſuch as occur in the plague, came under my notice. They were large and hard ſwellings on the limbs, with a black apex, which upon being opened, diſcharged a thin, dark-coloured, bloody matter. From one of theſe malignant ſores, an hemorrhage took place, which precipitated the death of the amiable widow of Dr John Morris.

7. A large and painful anthrax on the back, ſucceeded a favourable iſſue of the fever in the Rev. Dr Blackwell.

8. I met with a woman who ſhewed me the marks of a number of ſmall boils on her face and neck, which had accompanied her fever.

9. In one of my female patients, the cuticle peeled from her arms and breaſt after her recovery. It was remarkable in this caſe, that the ſkin diſcovered no yellowneſs except in thoſe parts which had been denudated of the cuticle.

Notwithſtanding

Notwithſtanding this diſpoſition to cutaneous eruptions in this diſorder, it was obſerved that bliſters were much leſs diſpoſed to mortify than in the common nervous fever. I met with only one caſe in which a deep-ſeated ulcer followed the application of bliſters to the legs. Such was the inſenſibility of the ſkin in ſome people, that bliſters made no impreſſion upon it.

IX. How far the *blood* may be conſidered as the vehicle of the contagion, it is not my buſineſs at preſent to inquire; nor ſhall I in this place mention the different appearances it exhibited when drawn from a vein. It has been ſuppoſed to undergo a change from a healthy to a putrid ſtate; and many of the ſymptoms of the fever which have been deſcribed, particularly the hemorrhagies and eruptions on the ſkin, have been aſcribed to this ſuppoſed putrefaction of the blood. It would be eaſy to multiply arguments to prove, that no ſuch thing as putrefaction can take place in the blood; and that the ſymptoms which have been ſuppoſed to prove its exiſtence, are all effects of a ſudden, violent, and rapid inflammatory action, or preſſure upon the blood-veſſels; and hence the external and internal hæmorrhagies. The petechiæ on the ſurface of the ſkin depend upon the ſame cauſe. They are nothing but effuſions of ſerum or red blood, from a rupture or preternatural dila-

tation

tation of the capillary veſſels *. The ſmell emitted from perſons affected by this diſeaſe was far from being of a putrid nature; and if this had been the caſe, it would not have proved the exiſtence of putrefaction in the blood; for a putrid ſmell is often diſcharged from the lungs, and from the pores in ſweat, which is wholly unconnected with a putrid, or perhaps any other morbid ſtate of the blood. There are plants which diſcharge an odor, which conveys to the noſe a ſenſation like that of putrefaction; and yet theſe plants exiſt at the ſame time, in a ſtate of the moſt healthy vegetation: nor does the early putrid ſmell of a body which periſhes with this fever, prove a putrid change to have taken place in the blood before death. All animals which die ſuddenly, and without loſs of blood, are diſpoſed to a ſpeedy putrefaction. This has long been remarked in animals that have been killed after a chace, or by lightning. The poiſonous air called *ſamiel*, which is deſcribed by Chardin, produces, when it deſtroys life, inſtant putrefaction. The bodies of men who die of violent paſſions, or after ſtrong convulſions,

* See Wallis's edition of Sydenham, Vol. i. p. 165. Vol. ii. p. 52, 94, 98, 350. De Haen's Ratio Medendi, Vol. ii. p. 162. Vol. iv. p. 172. Gaubii Pathologia, § 498, and Dr. Sybert's inaugural diſſertation, entitled "An Attempt to Diſprove the Doctrine of the Putrefaction of the Blood in Living Animals," publiſhed in Philadelphia in 1793.

or even after great muſcular exertion, putrefy in a few hours after death. The healthy ſtate of the body depends upon a certain ſtate of arrangement in the fluids. A derangement of theſe fluids is the natural conſequence of the violent and rapid motions, or of the undue preſſure upon the ſolids, which have been mentioned. It occurs in every caſe of death from indirect debility, whether it be induced by the exceſſive ſtimulus of contagion, by the volatile vitriolic acid which is ſuppoſed to conſtitute the deſtructive ſamiel wind, or by violent commotions excited in the body by external or internal cauſes. The practice among fiſhermen in ſome countries, of breaking the heads of their fiſh as ſoon as they are taken out of the water, in order to retard their putrefaction, proves the truth of the explanation I have given of its cauſe, ſoon after death. The ſudden extinction of life in the fiſh, prevents thoſe convulſive or violent motions which induce ſudden *diſorganization* in their bodies. It was remarkable that putrefaction took place moſt ſpeedily after death from the yellow fever, where the commotions of the ſyſtem were not relieved by evacuations. In thoſe caſes where purges and bleeding had been uſed, putrefaction did not take place ſooner after death than is common in any other febrile diſeaſe, under equal circumſtances of heat and air.

There

There is a fact mentioned by Dr. Ferriar, from Dr. Hamilton, late profeſſor of anatomy at Glaſgow, which may ſeem at firſt ſight to militate againſt the facts I have mentioned. He ſays that he had obſerved bodies which were brought into the diſſecting room, that had petechiæ on them, were longer in putrefying than any others. The fevers of which the poor (the common ſubjects of diſſection) die, are generally of the low nervous kind. Great *direct* debility is the characteriſtic of theſe fevers. The petechiæ which occur in them, appear in the laſt ſtage of this direct debility. They are the effect, not of too much impetus in the blood, as in the yellow fever, but of a defect or total abſence of it in the laſt hours of life. The ſlow progreſs of the body to putrefaction after death in the inſtances mentioned by Dr. Hamilton, ſeems to depend upon the ſame cauſe as that to which I have aſcribed it in thoſe caſes of death from the yellow fever, in which evacuations had been uſed, viz. *direct* debility. In the former caſes this ſlowneſs of putrefaction is induced by nature—in the latter by art. The effects of debility from both cauſes are, notwithſtanding, the ſame.

Thus have I deſcribed the ſymptoms of this fever. From the hiſtory I have given, it appears that it counterfeited nearly all the acute and chornic

chronic diſeaſes to which the human body is ſubject. An epitome, both of its ſymptoms and its theory, is happily delivered by Dr. Sydenham in the following words. After deſcribing the epidemic cough, pleuriſy, and peripneumony of 1675, he adds, "But in other epidemics, the ſymptoms are ſo ſlight from the diſturbance raiſed in the blood by the morbific particles contained in the maſs, that nature being in a manner *oppreſſed*, is rendered unable to produce *regular* ſymptoms that are ſuitable to the diſeaſe; and almoſt all the phænomena that happen are *irregular*, by reaſon of the entire *ſubverſion* of the animal œconomy; in which caſe the fever is often *depreſſed*, which of its own nature, would be very high. Sometimes alſo fewer ſigns of a fever appear than the nature of the diſeaſe requires, from a tranſlation of the malignant cauſe, either to the nervous ſyſtem, to ſome other parts of the body, or to ſome of the juices not contained in the blood; whilſt the morbific matter is yet turgid*."

The diſeaſe ended in death in various ways. In ſome it was ſudden; in others it came on by gradual approaches. In ſome the laſt hours of life were marked with great pain, and ſtrong convulſions; but in many more, death ſeemed to inſinu-

* Wallis's edition, Vol. i. p. 344.

ate

ate itſelf into the ſyſtem, with all the gentleneſs of natural ſleep. Mr. Powel expired with a ſmile on his countenance. Dr. Griffitts informed me that Dr. Johnſon exhibited the ſame ſymptom in the laſt hours of his life. This placid appearance of the countenance, in the act of dying, was not new to me. It frequently occurs in diſeaſes which affect the brain and nerves. I loſt a patient three years ago in the gout, who not only ſmiled, but laughed, a few minutes before he expired.

I proceed now to mention ſome peculiarities of the fever which could not be brought in under any of the foregoing heads.

In every caſe of this diſorder which came under my notice, there were evident remiſſions, or intermiſſions of the fever, or of ſuch ſymptoms as were ſubſtituted for fever. I have long conſidered with Mr. Senac, a *tertian* as the only original type of all fevers. The bilious yellow fever indicated its deſcent from this parent diſorder. I met with many caſes of regular tertians in which the patients were ſo well on the intermediate days as to go abroad. It appeared in this form in Mr. Van Berkel the miniſter of the United Netherlands. Nor was this mild form of the fever devoid of danger. Many died who neglected it as a trifling

diſorder, or who took the common remedies for intermittents to cure it. It generally ended in a remittent before it deſtroyed the patient. The tertian type diſcovered itſelf in ſome people after the more violent ſymptoms of the fever had been ſubdued, and continued in them for ſeveral weeks. It changed from a tertian to a quartan type in Mr. Thomas Willing, nearly a month after his recovery from the more acute and inflammatory ſymptoms of the diſorder.

It is nothing new for a malignant fever to appear in the form of a tertian. It is frequently the garb of the plague. Riverius deſcribes a tertian fever which proved fatal on the third day, which was evidently derived from the ſame exhalation which produced a continual malignant fever*.

The remiſſions were more evident in this, than in the common bilious fever. They generally occurred in the forenoon. It was my misfortune to be deprived by the great number of my patients, of that command of time which was neceſſary to watch the exacerbations of this fever under all their various changes, as to time, force, and dura-

* De Febre Peſtilenti, Vol. xi. p. 93.

tion.

tion. From all the obſervations that were ſuggeſted by viſits, at hours that were ſeldom left to my choice, I was led to conclude, that the fever exhibited in different people all that variety of forms which has been deſcribed by Dr. Cleghorn in his account of the tertian fever of Minorca. A violent exacerbation on even days was evidently attended with more danger than on odd days. The ſame thing was obſerved by Dr. Mitchell in the Yellow Fever of Virginia in the year 1741. "If "(ſays he) the exacerbations were on equal days, "they generally died in the third paroxyſm, or "the 6th day, but if on unequal days, they reco-"vered on the 7th."

The deaths which occurred on the 3d, 5th, and 7th days, appeared frequently to be the effects of the commotions or depreſſion, produced in the ſyſtem on the 2nd, 4th, and 6th days.

The remiſſion on the third day, was frequently ſuch as to beget a belief that the diſeaſe had run its courſe and that all danger was over. A violent attack of the fever on the 4th day removed this deception, and if a relaxation had taken place in the uſe of proper remedies on the 3d day, death frequently occurred on the 5th or the ſeventh.

The

The termination of this fever in life, and death, was much more frequent on the 3d, 5th, 7th, 9th and 11th days, than is common in the mild remitting fever. Where death occurred on the even days, it ſeemed to be the effect of a violent paroxiſm of the fever, or of great vigour of conſtitution, or of the force of medicines which protracted ſome of the motions of life beyond the cloſe of the odd days which have been mentioned.

I think I obſerved the fever to terminate on the third day more frequently in Auguſt, and during the firſt ten days in September, than it did after the weather became cool. In this, it reſembled the common bilious remittents of our city, alſo the ſimple tertians deſcribed by Dr Cleghorn *. The danger ſeemed to be in proportion to the tendency of the diſeaſe to a ſpeedy criſis, hence more died in Auguſt in proportion to the number who were affected than in September or October, when the diſeaſe was left to itſelf. But, however ſtrange after this remark it may appear, the diſeaſe yielded to the remedies which finally ſubdued it, more ſpeedily and certainly upon its firſt appearance in the city, than it did two or three weeks afterwards.

* Diſeaſes of Minorca, p. 185.

The diſeaſe continued for fifteen, twenty, and even thirty days in ſome people. Its duration was much influenced by the weather, and by the uſe or neglect of certain remedies (to be mentioned hereafter) in the firſt ſtage of the diſorder.

It has been common with authors to divide the ſymptoms of this fever into three different ſtages. The order I have purſued in the hiſtory of thoſe ſymptoms, will render this diviſion unneceſſary. It will I hope be more uſeful to divide the patients affected with the diſorder into three claſſes.

The *firſt* includes thoſe in whom the ſtimulus of the contagion, produced the ſymptoms of indirect debility, ſuch as coma, languor, ſighing, a diſpoſition to ſyncope, and a weak, or ſlow pulſe.

The *ſecond* includes thoſe in whom the contagion acted with leſs force, producing great pain in the head, and other parts of the body; delirium, vomiting, heat, thirſt, and a quick, tenſe, or full pulſe, with obvious remiſſions or intermiſſions of the fever.

The *third* claſs includes all thoſe perſons in whom the ſtimulus of the contagion acted ſo feebly as not to confine them to their beds or houſes.

This

This claſs of perſons affected by the yellow fever, was very numerous. Many of them recovered without medical aid, or by the uſe of domeſtic preſcriptions; many of them recovered in conſequence of a ſpontaneous diarrhœa, or plentiful ſweats; many were ſaved by moderate bleeding, and purging; while ſome died, who conceived their complaints to be occaſioned by a common cold, and neglected to take proper care of themſelves, or to uſe the neceſſary means for their recovery. It is not peculiar to the contagion of the yellow fever to produce this feeble operation upon the ſyſtem. It has been obſerved in the ſouthern ſtates of America, that in thoſe ſeaſons in which the common bilious fever is epidemic "no body is quite well," and that what are called in thoſe ſtates "inward fevers" are univerſal. The ſmall-pox even in the natural way, does not always confine the patient; and thouſands paſs through the plague without being confined to their beds or houſes. Dr Hodges preſcribed for this claſs of patients in his parlour in London in the year 1665, and Dr Patrick Ruſſel did the ſame from a chamber window fifteen feet above the level of the ſtreet at Aleppo. Notwithſtanding the mild form the plague put on in theſe caſes, it often proved fatal according to Dr Ruſſel. I have introduced theſe facts chiefly with a view of prepa-

ring the reader to reject the opinion that we had two ſpecies of fever in the city at the ſame time; and to ſhew that the yellow fever appears in a more ſimple form than with "ſtrongly marked" characters; or in other words, with a yellow ſkin, and a black vomitting.

It was remarkable that this fever always found out the weak part of every conſtitution it attacked. The head, the lungs, the ſtomach, the bowels, and the limbs, ſuffered more or leſs, according as they were more or leſs debilitated by previous inflammatory, or nervous diſeaſes, or by a mixture of both, as in the gout.

I have before remarked, that the influenza, the ſcarlatina, and a mild bilious remittent, prevailed in the city, before the yellow fever made its appearance. In the courſe of a few weeks they all diſappeared, or appeared with ſymptoms of the yellow fever; ſo that after the firſt week of September, it was the ſolitary epidemic of the city.

The only caſe like influenza which I ſaw after the 5th of September, was in a girl of 14 years of age, on the 13th of the month. It came on with a ſneezing and cough. I was called to her on the third day of her diſorder. The inſtant I felt her

her pulſe, I pronounced her diſeaſe to be the yellow fever. Her father was offended with this opinion, although he lived in a highly infected neighbourhood, and objected to the remedies I preſcribed for her. In a few days ſhe died. In the courſe of ten days, her father and ſiſter were infected, and both died I was informed, with the uſual ſymptoms of the yellow fever.

It has been an axiom in medicine, time immemorial, that no two contagious fevers of unequal force can exiſt long together in the ſame place. As this axiom ſeems to have been forgotten by many of the phyſicians of Philadelphia, and as the ignorance or neglect of it, led to that contrariety of opinion and practice, which unhappily took place in the treatment of the diſorder, I hope I ſhall be excuſed by thoſe phyſicians to whom this fact is as familiar as the moſt ſimple law of nature, if I fill a few pages with proofs of it, from practical writers.

Thucydides long ago remarked that the plague chaſed all other diſeaſes from Athens, or obliged them to change their nature, by aſſuming ſome of its ſymptoms.

Dr Sydenham makes the ſame remark upon the plague in London in 1665. Dr Hodges in his account of the ſame plague, ſays that "at the riſe of the plague all other diſtempers, went into it, but at its declenſion, that it degenerated into others, as inflammations, headach, quinſies, dyſenteries, ſmall-pox, meaſles, fevers, and hectics, wherein the plague yet predominated*."

During the prevalence of the plague in Grand Cairo, no ſporadic diſeaſe of any kind makes its appearance. The ſame obſervation is made by Sauvage in his account of the plague at Alais in the province of Languedoc†.

The ſmall-pox though a diſeaſe of leſs force than the plague, has often chaſed it from Conſtantinople, probably from its infecting at a greater diſtance than the plague. But this excluſive prevalence of a ſingle epidemic is not confined to the plague and ſmall-pox. Dr Sydenham's writings are full of proofs of the dominion of febrile diſeaſes over each other: Hence after treating upon a ſympto-

* Dr Hodges Account of the Plague in London, p. 26.

† Sed hoc obſervatu dignum fuit, omnes alios morbos acutos, durante peſte ſiluiſſe, et omnes morbos acutos e peſtis genere fuiſſe. Noſologia Methodica, vol. i. p. 416.

matic

matic pleuriſy, which ſometimes accompanied a ſlow fever in the year 1675, and which had probably been injudiciouſly treated by ſome of thoſe phyſicians who preſcribe for the name of a diſeaſe, he delivers the following aphoriſm, "whoever in the cure of fevers, hath not always in view, the conſtitution of the year, inaſmuch as it tends to produce ſome particular epidemic diſeaſe, and likewiſe to reduce all the cotemporary diſeaſes to its own form and likeneſs, proceeds in an uncertain and fallacious way*." It appears further from the writings of this excellent phyſician, that where the monarchy of a ſingle diſeaſe was not immediately acknowledged, by a ſudden retreat of all cotemporary diſeaſes, they were forced to do homage to it, by wearing its livery. It would be eaſy to multiply proofs of this aſſertion, from the numerous hiſtories of epidemics which are to be found in his works. I ſhall mention only one or two of them. A continual fever accompanied by a dry ſkin, had prevailed for ſome time in the city of London. During the continuance of this fever, the regular ſmall-pox made its appearance. It is peculiar to the ſmall-pox when of a diſtinct nature, to be attended by irregular ſweats before the eruption of the pock. The continual fever

* Vol. i. p. 340.

now put on a new ſymptom. It was attended by ſweats in its firſt ſtage, exactly like thoſe which attended the eruptive fever of the ſmall-pox*. This deſpotiſm of a powerful epidemic, extended itſelf to the moſt trifling indiſpoſitions. It even blended itſelf, Dr Sydenham tells us, with the commotions excited in the ſyſtem by the ſuppreſſion of the lochia, as well as with the common puerperile fever †. Dr Morton, has left teſtimonies behind him in different parts of his works, which eſtabliſh, in the moſt ample manner, the truth of Dr Sydenham's obſervations. Dr Huxham deſcribes the ſmall-pox as blending ſome of its ſymptoms with thoſe of a ſlow fever at Plymouth in the year 1729‡. Dr Cleghorn mentions a conſtitution of the air at Minorca, ſo highly inflammatory, "that not only tertian fevers, but even a common hurt or bruiſe required more plentiful evacuations than ordinary."§ Riverius informs us in his hiſtory of a peſtilential fever that prevailed in France, that "it united itſelf with phrenitis, angina, pleuriſy, peripneumony, hepatitis, dyſentery, and many other diſeaſes ‖."

* Vol. i. p. 352.

† Vol. ii. p. 164. ſee alſo p. 1. p. 109, 122, 204, 212, 233, 274, 355, 358-9, and 436.

‡ De Aere et morb. epidem. p. 33, 34.

§ Page 285. ‖ De Febre Peſtilenti, vol. ii. p. 95.

The

The bilious remitting fever which prevailed in Philadelphia in 1780, chaſed away every other febrile diſeaſe; and the ſcarlatina anginoſa which prevailed in our city in 1783 and 1784, furniſhed a ſtriking proof of the influence of epidemics over each other. In the account which I publiſhed of this diſeaſe, in the year 1789, there are the following remarks. "The intermitting fever which made its appearance in Auguſt, was not loſt during the month of September. It continued to prevail, but with ſeveral peculiar ſymptoms. In many perſons it was accompanied by an eruption on the ſkin, and a ſwelling of the hands and feet. In ſome it was attended with ſore throat, and pains behind the ears. Indeed ſuch was the prevalence of the contagion which produced the ſcarlatina anginoſa, that many hundred people complained of ſore throats, without any other ſymptom of indiſpoſition. The ſlighteſt exciting cauſe, and particularly cold, ſeldom failed of producing the diſorder *."

I ſhall mention only one more authority in favour of the influence of a ſingle epidemic upon diſeaſes. It is taken from Mr Clark's eſſay on the epidemic diſeaſe of lying-in women, of the

* Medical Inquiries and Obſervations, Lond. edit. Vol. I. p. 122.

years

years 1787 and 1788. "There does not appear to be any thing in a parturient ſtate, which can prevent women from being affected by the general cauſes of diſeaſe at that time; and ſhould they become ill, their complaints will probably partake of the nature of the reigning epidemic*." I have ſaid that the fever ſometimes put on the ſymptoms of dyſentery, pleuriſy, rheumatiſm, colic, palſy, and even of the locked jaw. That theſe were not original diſeaſes, but ſymptomatic affections only of the reigning epidemic, will appear from other hiſtories of bilious fevers. Dr Balfour tells us in his account of the inteſtinal remitting fever of Bengal †, that it often appeared with ſymptoms of dyſentery, rheumatiſm, and pleuriſy. Dr Cleghorn and Dr Lind mention many caſes of the bilious fever appearing in the form of a dyſentery. Dr Clark aſcribes the dyſentery, the diarrhœa, the colic, and even the palſy, to the ſame contagion which produced the bilious fever in the Eaſt Indies ‡; and Dr Hunter, in his treatiſe upon the diſeaſes of Jamaica, mentions the locked jaw as one of its occaſional ſymptoms.

* Page 28.

† Page 132.

‡ Obſervations on the Diſeaſes in long Voyages to the Eaſt Indies, Vol. I. p. 13, 14, 48, 151. Vol. II. p. 99, 318. and 320.

Even

Even the different grades of this fever, from the mildeſt intermittent to the moſt acute continual fever, have been diſtinctly traced by Lanciſi to the ſame marſh exhalation *.

However irrefragably theſe numerous facts and authorities eſtabliſh the aſſertion of the prevalence of but one powerful epidemic at a time, the propoſition will receive freſh ſupport, from attending to the effects of two impreſſions of unequal force made upon the ſyſtem at the ſame time: only one of them is felt: hence the gout is ſaid to cure all other diſeaſes. By its ſuperior pain it deſtroys ſenſations of a leſs painful nature. The ſmall-pox and meaſles have ſometimes exiſted together in the body; but this has, I believe, ſeldom occurred, where one of them has not been the predominating diſeaſe †. In this reſpect, this combination of epidemics only conforms to the general law which has been mentioned.

I beg pardon for the length of this digreſſion. I did not introduce it to expoſe the miſtakes of thoſe phyſicians who found as many diſeaſes in our city,

* Lib. II. Cap. V.

† Hunter on the Venereal Diſeaſe, introduction, p. 3.

as

as the yellow fever had ſymptoms, but to vindicate myſelf from the charge of innovation, in having uniformly and unequivocally aſſerted, after the firſt week in September, that the yellow fever was the only febrile diſeaſe which prevailed in the city. I ſhall hereafter mention ſome facts upon the ſubject of the extent of the contagion, which will add ſuch weight to the aſſertion, as to render the diſbelief of it, as much a mark of a deficiency of reaſon, as it is of reading and obſervation.

Science has much to deplore from the multiplication of diſeaſes. It is as repugnant to truth in medicine, as polytheiſm is to truth in religion. The phyſician who conſiders every different affection of the different ſyſtems in the body, or every affection of different parts of the ſame ſyſtem, as diſtinct diſeaſes, when they ariſe from one cauſe, reſembles the Indian or African ſavage, who conſiders water, dew, ice, froſt, and ſnow, as diſtinct eſſences: while the phyſician who conſiders the morbid affections of every part of the body, (however diverſified they may be in their form or degrees) as derived from one cauſe, reſembles the philoſopher, who conſiders dew, ice, froſt, and ſnow, as different modifications of water, and as derived ſimply from the abſence of heat.

Humanity

Humanity has likewiſe much to deplore from this paganiſm in medicine. The ſword will probably be ſheathed for ever, as an inſtrument of death, before phyſicians will ceaſe to add to the mortality of mankind, by preſcribing for the names of diſeaſes.

The facts I have delivered upon this ſubject will admit of a very important application to the cure, not only of the yellow fever, but of all other acute and dangerous epidemics. I ſhall hereafter aſſign a final cauſe for the law of epidemics which has been mentioned, which will diſcover an union of the goodneſs of the Supreme Being with one of the greateſt calamities of human life.

All ages were affected by this fever, but perſons between fourteen, and forty years of age, were moſt ſubject to it. Many old people had it, but it was not ſo fatal to them, as to robuſt perſons in middle life. It affected children of all ages. I met with a violent caſe of the diſorder, in a child of four months, and a moderate caſe of it, in a child of only ten weeks old. The latter had caught it from its mother. It had a deep yellow ſkin. Both theſe children recovered.

The

The proportion of children who ſuffered by this fever may be conceived from a ſingle fact. Seventy five perſons were buried in the grave-yard of the Swediſh Church in the months of Auguſt, September, and October, twenty four of whom were children. They were buried chiefly in September and October; months, in which children, generally enjoy good health in our city.

Men were more ſubject to the diſeaſe than women. Pregnancy ſeemed to expoſe women to it.

The refugees from the French Weſt-Indies, univerſally eſcaped it. This was not the caſe with the natives of France, who had been ſettled in the city.

It is nothing new, for epidemics to affect perſons of one nation, and to paſs by perſons of other nations in the ſame city or country. At Nimuguen in the year 1736, Deigner informs us that the French people, (two old men excepted), and the Jews, eſcaped a dyſentery which was univerſal among perſons of all other nations. Ramazini tells us that the Jews at Modena, eſcaped a tertian fever which affected nearly all the other inhabitants of the town. Shenkius ſays that the Dutch

and

and Italians eſcaped a plague which prevailed for two years in one of the towns of Switzerland, and Dr Bell, in an inaugural diſſertaion publiſhed at Edinburgh in 1779, remarks that the jail fever which attacked the ſoldiers of the Duke of Buccleugh's regiment, ſpared the French priſoners who were guarded by them. It is difficult to account for theſe facts. However numerous their cauſes may be, a difference in diet which is as much a diſtinguiſhing mark of nations as dreſs, or manners, will probably be found to be one of them.

From the accounts of the yellow fever which had been publiſhed by many writers, I was led to believe that the negroes in our city would eſcape it. In conſequence of this belief, I publiſhed the following extract from Dr Lining's hiſtory of the yellow fever as it had four times appeared in Charleſton in South-Carolina.

For the American Daily Advertiſer.

" IT has been remarked, that the *black people* have in no one inſtance been infected with the malignant fever which now prevails in our city. The late Dr Lining, of South Carolina, long ago made the ſame remark. " There is ſomething

ſomething very ſingular (ſays the Doctor) in the conſtitution of the Negroes which renders them not liable to this fever; for though many of them were as much expoſed as the nurſes to the infection, yet I never knew of one inſtance of this fever among them, though they are equally ſubject with the white people to the bilious fever*."

The only deſign of this remark is, to ſuggeſt to our citizens the ſafety and propriety of employing black people to nurſe and attend perſons infected by this fever; alſo, to hint to the black people, that a noble opportunity is now put into their hands, of manifeſting their gratitude to the inhabitants of that city, which firſt planned their emancipation from ſlavery, and who have ſince afforded them ſo much protection and ſupport, as to place them, in point of civil and religious privileges, upon a footing with themſelves."

A day or two after this publication, the following letter from the Mayor of the city, to Mr Claypoole the printer of the Mail, appeared in his paper.

* Eſſays and Obſervations, Phyſical and Literary. Vol. xi. page 409.

"SIR,

"SIR,

"IT is with peculiar ſatisfaction that I communicate to the public, through your paper, that the AFRICAN SOCIETY, touched with the diſtreſſes which ariſe from the preſent dangerous diſorder, have voluntarily undertaken to furniſh nurſes to attend the afflicted: and that by applying to ABSALOM JONES and WILLIAM GRAY, both members of that ſociety, they may be ſupplied.

September 6th, 1793. } MATTH. CLARKSON, *Mayor.*"

It was not long after theſe worthy Africans undertook the execution of their humane offer of ſervices to the ſick, before I was convinced I had been miſtaken. They took the diſeaſe, in common with the white people, and many of them died with it. I think I obſerved the greateſt number of them to ſicken after the mornings and evenings became cool. A large number of them were my patients. The diſeaſe was lighter in them, than in white people. I met with no caſe of hemorrhage in a black patient.

The tobacconiſts, and perſons who uſed tobacco did not eſcape the diſeaſe. I obſerved ſnuff-takers to be more devoted to their boxes than uſual, during the prevalence of the fever.

I have remarked formerly that ſervant maids ſuffered much by the diſeaſe. They were the only patients I loſt in ſeveral large families. I aſcribe their deaths to the following cauſes:

1*ſt*. To the great indirect debility induced upon their ſyſtems by fatigue in attending their maſters and miſtreſſes, or their children. Indirect debility, according to its degrees and duration ſeems to have had the ſame effect upon the mortality of this fever, that it has upon the mortality of an inflammation of the lungs. When it is moderate and of ſhort duration, it prediſpoſes only to a common pneumony, but when it is violent and protracted, in its degrees and duration, it prediſpoſes to a pulmonary conſumption.

2*dly*. To their receiving large quantities of contagion into their bodies, and in a moſt concentrated ſtate by being obliged to perform the moſt menial offices for the ſick, and by waſhing, as well as removing infected linen, and the like.

3*dly*. To their being left more alone in confined or diſtant rooms, and thereby ſuffering from depreſſion of ſpirits, or the want of a punctual ſupply of food and medicines.

There

There did not appear to be any advantage from ſmelling vinegar, tar, camphor, or volatile ſalts, in preventing the diſorder. Bark and wine were equally ineffectual for that purpoſe. I was called to many hundred people who were infected after uſing one or more of them. Nor did the white-waſhing of walls ſecure families from the action of the contagion. I am diſpoſed to believe garlick was the only ſubſtance that was in any degree uſeful, in preventing the diſorder. I met with ſeveral perſons who chewed it conſtantly, and who were much expoſed to the contagion, without being infected. All other ſubſtances ſeemed to do harm by begetting a falſe confidence in the mind, to the excluſion of more rational preſervatives. I have ſuſpected further, that ſuch of them as were of a volatile nature, helped to ſpread the diſeaſe by affording a vehicle for the contagion through the air.

There was great mortality in all thoſe families who lived in wooden houſes. Whether this aroſe from the ſmall ſize of theſe houſes, or from the want of cleanlineſs of the people who occupied them, or from the contagion becoming more accumulated, by adhering to the wood, I am unable to determine. Perhaps it was the effect of the co-operation of all three of thoſe cauſes.

Universitas

I have ſaid formerly that intemperance in drinking prediſpoſed to the diſeaſe; but there were ſeveral inſtances of perſons having eſcaped it who were conſtantly under the influence of ſtrong drink. The ſtimulus of ardent ſpirits, probably predominated over the ſtimulus of the contagion, and thus excited an artificial fever which defended the ſyſtem from that which was epidemic.

I heard of ſome ſea-faring people who lived on board their veſſels who eſcaped the diſeaſe. The ſmell of the tar was ſuppoſed to have preſerved them; but from its being ineffectual in other caſes, I was led to aſcribe their eſcape to the infected air of the city being diluted by a mixture with the pure air that came from the water.

Many people who were infected in the city, were attacked by the diſeaſe in the country, but they propagated it in very few inſtances, even to perſons who ſlept in the ſame room with them.

Dr. Lind informs us that many perſons eſcaped the yellow-fever which prevailed in Penſacola in the year 1765, by retiring to the ſhips which lay in the harbour, and that when the diſeaſe had been taken, the pure air of the water changed it into

into an intermitting fever*. The ſame changes have frequently been produced in malignant fevers, by ſending patients infected with them from the foul air of a city, into the pure air of the country.

Perſons confined in the Houſe of Employment, in the Hoſpital, and in the Jail, were preſerved from the fever. The airy and remote ſituation of thoſe buildings, was probably the chief means of their preſervation. Perhaps they derived additional ſecurity from their ſimple diet, their exemption from hard labour, and from being conſtantly ſheltered from heat and cold.

Several families who ſhut up their front and back doors and windows, and avoided going out of their houſes except to procure proviſions, eſcaped the diſorder.

I have taken ſome pains to aſcertain whether any claſs of tradeſmen eſcaped the fever, or whether there was any ſpecies of labour which protected from it. The reſult of my inquiries is as follows: Three butchers only out of nearly one hundred who remained in the city, died with the diſorder. Many of them attended the markets

* Diſeaſes of Warm Climates, p. 169.

every day. Two painters, who worked at their buſineſs during the whole time of the prevalence of the fever, and in expoſed ſituations, eſcaped it. Out of forty ſcavengers who were employed in collecting and carrying away the dirt of the ſtreets, only one caught the fever and died. Very few grave diggers, compared with the number who were employed in that buſineſs, were infected; and it is ſo well known, that ſcarcely an inſtance was heard of perſons taking the diſeaſe, who were conſtantly employed in digging cellars. The fact is not new that grave-diggers eſcape the contagion of malignant fevers. It is taken notice of by Dr. Clark. There ſeems to be ſomething in the freſh earth which attracts or deſtroys by mixture, contagion of every kind. Clothes infected by the ſmall-pox are more certainly purified by being buried under ground, than in any other way. Even poiſons are rendered inert, by the action of the earth upon them. Dogs have long ago eſtabliſhed this fact, by ſcratching a hole in the ground, and burying their limbs or noſes in it, when bitten by poiſonous ſnakes. The practice I have been told, has been imitated with ſucceſs by the ſettlers upon new lands in ſeveral parts of the United States.

It was ſaid by ſome phyſicians in the public papers, that the neighbourhood of the grave-yards was

was more infected than other parts of the city. The reverſe of this aſſertion was true in ſeveral caſes, owing probably to the line of communication of the contagion being broken by the abſence of houſes, and to its being diluted and weakened by its mixture with the air of the grave-yards; for this air was pure, compared with that which ſtagnated in the ſtreets.

It was ſaid further that the diſeaſe was propagated by the inhabitants aſſembling on Sundays for public worſhip; and as a proof of this aſſertion, it was reported, that the deaths were more numerous on Sundays than on other days; occaſioned by the contagion received on one Sunday, producing death on the ſucceeding firſt day of the week. The regiſter of the deaths ſhews that this was not the caſe. I am diſpoſed to believe that fewer people ſickened on Sundays, than on any other day of the week; owing to the general reſt from labour, which I have before ſaid was one of the exciting cauſes of the diſeaſe. From ſome facts to be mentioned preſently, it will appear probable, that places of public worſhip, in conſequence of their ſize, as well as of their being ſhut up during the greateſt part of the week, were the freeſt from contagion of any houſes in the city. It is agreeable to diſcover in this, as well as in all other caſes

of public and private duty, that the means of health, and moral happineſs are in no one inſtance oppoſed to each other.

There were for ſeveral weeks two ſources of infection, viz. exhalation, and contagion. The exhalation infected at the diſtance of three and four hundred yards; while the contagion infected only acroſs the ſtreets. The more narrow the ſtreet, the more certainly the contagion infected. Few eſcaped it in alleys. After the 12th of September, the atmoſphere of every ſtreet in the city was loaded with contagion; and there were few citizens in apparent good health, who did not exhibit one or more of the following marks of its preſence in their bodies.

1. A yellowneſs in the eyes, and a ſallow colour upon the ſkin.

2. A preternatural quickneſs in the pulſe. I found but two exceptions to this remark, out of a great number of perſons whoſe pulſes I examined. In one of them it diſcovered ſeveral preternatural intermiſſions in the courſe of a minute. This quickneſs of pulſe occurred in the negroes, as well as in the white people. I met with it in a woman who had had the yellow fever in 1762.

In

In two women, and in one man above 70, the pulſe beat upwards of 90 ſtrokes in a minute. This preternatural ſtate of the pulſe during the prevalence of a peſtilential fever in perſons in health, is taken notice of by Riverius*.

3. Frequent and copious diſcharges by the ſkin of yellow ſweats. In perſons who were much expoſed to the contagion, theſe ſweats ſometimes had an offenſive ſmell, reſembling that of the waſhings of a gun.

4. A ſcanty diſcharge of high coloured or turbid urine.

5. A deficiency of appetite, or a greater degree of it than was natural.

6. Coſtiveneſs.

7. Wakefulneſs.

8. Head-ach.

9. A preternatural dilatation of the pupils—This was univerſal. I was much ſtruck in obſerv-

* "Pulſus ſanorum pulſibus ſimiles admodum, periculoſi." *De Febre Peſtilenti*, p. 114

ing

ing the pupil in one of the eyes of a young man who called upon me for advice, to be of an oblong figure. Whether it was natural, or the effect of the contagion acting on his brain, I could not determine.

It will be thought leſs ſtrange, that the contagion ſhould produce thoſe changes in the ſyſtems of perſons who reſided conſtantly in the city, when I add, that many country people who ſpent but a few hours in the ſtreets in the day, in attending the markets, caught the diſeaſe, and ſickened and died after they returned home; and that others, whom buſineſs compelled to ſpend a day or two in the city during the prevalence of the fever, but who eſcaped an attack of it, declared that they were indiſpoſed during the whole time, with languor or head-ach.

I was led to obſerve and record the above effects of the contagion upon perſons in apparent good health, by a fact I met with in Dr. Mitchell's hiſtory of the yellow fever in Virginia in the year 1741. In that fever, blood drawn from a vein was always diſſolved. The ſame ſtate of the blood was obſerved in many perſons who had been expoſed to the contagion, who diſcovered no other ſymptom of the diſeaſe.

A wo-

A woman whom I had formerly cured of a mania, who lived in an infected neighbourhood, had a freſh attack of that diſorder, accompanied by an unuſual menſtrual flux. I aſcribed both theſe complaints to the action of the contagion upon her ſyſtem.

Citizens thus impregnated with the contagion, communicated it in ſeveral inſtances to their country friends. The diſeaſe produced in this way was very light, amounting in all the caſes that came under my notice, to little more than a ſickneſs at ſtomach or vomiting.

The ſmell of the contagion, as emitted from a patient in a clean room, was like that of the ſmall-pox, but in moſt caſes of a leſs diſagreeable nature. Putrid ſmells in ſick rooms were the effects of a mixture of the contagion with ſome filthy matters. In ſmall rooms, crouded in ſome inſtances with four or five ſick people, there was an effluvia that produced giddineſs, ſickneſs at ſtomach, a weakneſs of the limbs, faintneſs, and in ſome caſes a diarrhœa. I met with a fetid breath in one patient, which was not the effect of that medecine which ſometimes produces it.

The contagion adhered to all kinds of clothing, and ſeemed to be propagated by them. It was in

in no inſtance communicated by means of paper; a circumſtance which contributed both to leſſen and encreaſe the diſtreſs produced by the diſeaſe, by enabling the citizens to keep up an intercourſe by letters with their country friends.

The ſtate of the atmoſphere during the whole month of September, and the firſt two weeks in October, favoured the accumulation of the contagion in the city.

The regiſter of the weather, ſhews how little the air was agitated by winds during the above time. In vain were changes in the moon expected to alter the ſtate of the air. The light of the morning, mocked the hopes that were raiſed by a cloudy ſky in the evening. The ſun ceaſed to be viewed with pleaſure. Hundreds ſickened every day beneath the influence of his rays; and even where they did not excite the diſeaſe, they produced a languor in the body unknown to the oldeſt inhabitant of the city at the ſame ſeaſon of the year.

A meteor was ſeen at two o'clock in the morning on or about the twelfth of September. It fell between Third-ſtreet and the Hoſpital, nearly in a line with Pine-ſtreet. Moſchetoes (the uſual attendants of a ſickly autumn) were uncommonly numerous.

numerous. Here and there a dead cat added to the impurity of the air of the ſtreets; for many of thoſe animals periſhed with hunger in the city, in conſequence of ſo many houſes being deſerted by the inhabitants who had fled into the country.

It appears further, from the regiſter of the weather, that there was no rain between the 25th of Auguſt and the 15th of October, except a few drops, hardly enough to lay the duſt of the ſtreets on the 9th of September, and the 12th of October. In conſequence of this drought, the ſprings and wells failed in many parts of the country. The duſt in ſome places extended two feet below the ſurface of the ground. The paſtures were deficient, or burnt up. There was a ſcarcity of autumnal fruits in the neighbourhood of the city. But while vegetation drooped or died from the want of moiſture in ſome places, it revived with preternatural vigor from unuſual heat in others. Cherry-trees bloſſomed, and apple, pear, and plum-trees bore young fruit in ſeveral gardens in Trenton, thirty miles from Philadelphia, in the month of October.

However inoffenſive uniform heat, when agitated by gentle breezes may be, there is, I believe, no record of a dry, warm and ſtagnating air, having

having exiſted for any length of time without producing diſeaſes. Hippocrates in deſcribing a peſtilential fever, ſays the year in which it prevailed, was without a breeze of wind *. The ſame ſtate of the atmoſphere for ſix weeks, is mentioned in many of the hiſtories of the plague which prevailed in London in 1665. Even the ſea air itſelf becomes unwholeſome by ſtagnating; hence Dr. Clark informs us, that ſailors become ſickly after long calms in Eaſt India voyages †. Sir John Pringle delivers the following aphoriſm from a number of ſimilar obſervations upon this ſubject. "When the heats come on ſoon and continue throughout autumn, not moderated by winds, or rains, the ſeaſon proves ſickly, diſtempers appear early, and are dangerous ‡."

Who can review this account of the univerſal diffuſion of the contagion of this diſeaſe, its univerſal effects upon perſons apparently in good health, and its accumulation and concentration, in conſequence of the calmneſs of the air, and believe, that it was poſſible for a febrile diſeaſe to

* "Sine aura, uſque annus fuit." *Epid.* 3.

† Vol. i. 5.

‡ Diſeaſes of the Army, p. 5. of the 7th London Edition.

exiſt

exiſt at that time in our city that was not derived from this contagion?

The Weſt India writers upon the yellow fever have ſaid, that it is ſeldom taken twice, except by perſons who have ſpent ſome years in Europe or America in the interval between its firſt and ſecond attack. I directed my inquiries to this queſtion, and I now proceed to mention the reſult of them. I met with five perſons during the prevalence of the diſeaſe, who had had it formerly; two of them in the year 1741, and three in 1762, who eſcaped it in 1793, although they were all more or leſs expoſed to the contagion. One of them felt a conſtant pain in her head while the diſeaſe was in her family. Four of them were aged, and of courſe leſs liable to be acted upon by the contagion, than perſons in early or middle life. Mr. Thomas Shields furniſhed an unequivocal proof that the diſeaſe could be taken after an interval of many years. He had it in the year 1762, and narrowly eſcaped from a violent attack of it laſt year. Caſes of re-infection, or more properly, of re-excitement were very common during the prevalence of this fever. They occurred moſt frequently, where the firſt attack had been light. But they ſucceeded attacks that were ſevere in

Dr.

Dr. Griffitts, Dr. Meaſe, my pupil Mr. Coxe, and ſeveral others, whoſe caſes came under my notice.

I have before remarked, that the contagion ſometimes excited a fever as ſoon as it was taken into the body, but that it often lay there from one to ſixteen days, before it produced the diſeaſe. How long it exiſted in the body after a recovery from the fever, I could not tell, for perſons who recovered were in moſt caſes expoſed to the action of the contagion from external ſources. The preternatural dilatation of the pupils was a certain mark of the continuance of ſome portion of the contagion in the ſyſtem. In one perſon who was attacked with the fever on the night of the 9th of October, the pupils did not contract to their natural dimenſions, until the 7th of November.

Having deſcribed the effects of the contagion upon the body, I proceed now to mention the changes induced upon it by death.

Let us firſt take a view of it as it appeared ſoon after death. Some new light may perhaps be thrown upon the proximate cauſe of the diſeaſe, by this mode of examining the body.

My information upon this ſubject was derived from the attendants upon the ſick, and from the two African citizens who were employed in burying the dead, viz. Richard Allen and Abſalom Jones. The coincidence of the information I received from different perſons, ſatisfied me that all that I ſhall here relate, is both accurate and juſt.

A deep yellow colour appeared in many caſes within a few minutes after death. In ſome, the ſkin became purple, and in others black. I heard of one caſe in which the body was yellow above, and black below its middle. In ſome, the ſkin was as pale, as it is in perſons who die of common fevers. A placid countenance was obſerved in many, reſembling that which occurs in an eaſy and healthful ſleep.

Some were ſtiff within one hour after death. Others were not ſo, for ſix hours afterwards. This ſudden ſtiffneſs after death, Dr Valli informs us, occurred in perſons who died of the plague in Smyrna in the year 1784*.

Some grew cold ſoon after death, while others retained a conſiderable degree of heat for ſix hours, more eſpecially on their backs.

* Experiments on Animal Electricity, p. 90.

A ſtream of tears appeared on the cheeks of a young woman, which ſeemed to have flowed after her death.

Some putrefied in a ſhort time after their diſſolution, but others had no ſmell for twelve, eighteen and twenty hours afterwards. This abſence of ſmell occurred in thoſe caſes in which evacuations had been uſed without ſucceſs in the treatment of the diſeaſe.

Many diſcharged large quantities of black matter from the bowels, and others blood from the noſe, mouth and bowels after death. The frequency of theſe diſcharges, gave riſe to the practice of pitching the joints of the coffins which were uſed to bury the dead.

The morbid appearances of the internal parts of the body as they appear by diſſection after death, from the yellow fever, are different in different countries, and in the ſame countries in different years. I conſider them all as effects only of a ſtimulus acting upon the whole ſyſtem, and determined more or leſs by accidental circumſtances, to particular viſcera. Perhaps the ſtimulus of the contagion determines the fluids more violently in moſt caſes to the liver, ſtomach, and bowels, and thereby diſpoſes them more than other

parts

parts to inflammation and mortification, and to ſimilar effuſions and eruptions with thoſe which take place on the ſkin. There can be no doubt of the contagion acting ſpecifically upon the liver, and thereby altering the qualities of the bile. I tranſcribe with great pleaſure the following account of the ſtate of the bile in a female ſlave of forty years of age from Dr Mitchell's hiſtory of the yellow fever, as it prevailed in Virginia in the years 1737 and 1741, inaſmuch as it was part of that clue which led me to adopt one of the remedies on which much of the ſucceſs of my practice depended.

"The gall bladder (ſays the Doctor) appeared outwardly of a deep yellow, but within was full of a black ropy coagulated atrabilis, which ſort of ſubſtance obſtructed the pori biliarii, and ductus choledochus. This atrabilis was hardly fluid, but upon opening the gall bladder, it retained its form, and ſhape, without being evacuated, being of the conſiſtence of a thin extract, and within, glutinous and ropy, like ſoap when boiling. This black matter ſeemed ſo much unlike bile, that I doubted if there were any bile in the gall-bladder. It more reſembled bruiſed or mortified blood, evacuated from the mortified parts of the liver, ſurrounding it, although it would ſtain a knife or probe thruſt into it of a yellow colour, which with

its ropy conſiſtence, ſeemed more peculiar to a bilious humour."

The ſame appearance of the bile was diſcovered in ſeveral other ſubjects diſſected by Dr Mitchell.

The liver in the abovementioned ſlave, was turgid and plump on its outſide, but on its concave ſurface, two thirds of it were of a deep black colour, and round the gall-bladder, it ſeemed to be mortified and corrupted.

The duodenum was lined on its inſide near the gall bladder with a viſcid ropy bile, like that which has been deſcribed. Its villous coat was lined with a thick fur or ſlime, which when ſcraped or pealed off, the other vaſcular and muſcular coats of the gut, appeared red and inflamed.

The omentum was ſo much waſted, that nothing but its blood-veſſels could be perceived.

The ſtomach was inflamed both on its outſide and inſide. It contained a quantity of bile of the ſame conſiſtence, but of a blacker colour than that which was found in the gall bladder. Its villous coat like that of the duodenum, was covered with fuzzy and ſlimy matter. It moreover appeared to be

be diſtended or ſwelled. This peculiarity in the inner coat of the ſtomach was univerſal in all the bodies that were opened, of perſons who died of this diſeaſe.

The lungs inſtead of being collapſed, were inflated as in inſpiration. They were all over full of black or livid ſpots. On theſe ſpots were to be ſeen ſmall veſicles or bliſters, like thoſe of an eryſipelas or gangrene, containing a yellow humour.

The blood-veſſels in general ſeemed empty of blood, even the vena cava and its branches; but the vena portarum was full and diſtended as uſual. The blood ſeemed *collected* in the *viſcera*; for upon cutting the lungs or ſound liver or ſpleen, they bled freely.

The brain was not opened in this body, but it was not affected in three others whoſe brains were examined.

Dr Mackittrick, in his inaugural diſſertation publiſhed at Edinburgh in the year 1766 "De febre Indiæ occidentalis, Maligna Flava," or upon the yellow fever of the Weſt Indies, ſays, that in ſome of the patients who died of it, he found the

liver ſphacelated, the gall bladder full of black bile, and the veins turgid with black fluid blood. In others he found the liver no ways enlarged, and its "texture only vitiated." The ſtomach, the duodenum, and ilium, were remarkably inflamed in all caſes. The pericardium contained a viſcid yellow ſerum, and in a larger quantity than common. The urinary bladder was a little inflamed. The lungs were ſound.

Dr Hume in deſcribing the yellow fever of Jamaica, informs us, that in ſeveral dead bodies which he opened, he found the liver enlarged and turgid with bile, and of a pale yellow colour. In ſome he found the ſtomach and duodenum inflamed. In one caſe he diſcovered black ſpots in the ſtomach, of the ſize of a crown piece. To this account he adds, "that he had ſeen ſome ſubjects opened, on whoſe ſtomachs *no marks of inflammation* could be diſcovered; and yet theſe had exceſſive vomiting."

Dr Lind has furniſhed us with an account of the ſtate of the body after death in his ſhort hiſtory of the yellow fever, which prevailed at Cadiz in the year 1764. "The ſtomach, (he ſays) meſentery, and inteſtines were covered with gangrenous ſpots: there were ulcers on the orifice of the ſtomach,

ſtomach, and the liver and lungs were of a putrid colour and texture *."

To theſe accounts of the morbid appearances of the body after death from the yellow fever, I ſhall only add the account of ſeveral diſſections which was given to the public in Mr Brown's Gazette, during the prevalence of our late epidemic, by Dr Phyſic and Dr Cathrall.

"BEING well aſſured of the great importance of diſſections of morbid bodies in the inveſtigation of the nature of diſeaſes, we have thought it of conſequence that ſome of thoſe, dead of the preſent prevailing malignant fever, ſhould be examined; and without enlarging on our obſervations, it appears at preſent ſufficient to ſtate the following facts.

"1ſt. That the brain in all its parts has been found in a natural condition.

"2d. That the viſcera of the thorax are perfectly ſound. The blood, however, in the heart and veins is fluid, ſimilar in its conſiſtence, to the blood of perſons who have been hanged, or deſtroyed by electricity.

* Diſeaſes of Warm Climates, p. 125.

" 3d. That the ſtomach, and beginning of the duodenum are the parts that appear moſt diſeaſed. In two perſons who died of the diſeaſe on the 5th day, the villous membrane of the ſtomach, eſpecially about its ſmaller end, was found highly inflamed; and this inflammation extended through the pylorus into the duodenum, ſome way.—The inflammation here, was exactly ſimilar to that induced in the ſtomach by acrid poiſons, as by arſenic, which we have once had an opportunity of ſeeing in a perſon deſtroyed by it.

" The bile in the gall-bladder was quite of its natural colour, though very viſcid.

" In another perſon who died on the 8th day of the diſeaſe, ſeveral ſpots of extravaſation were diſcovered between the membranes, particularly about the ſmaller end of the ſtomach, the inflammation of which had conſiderably abated. Pus was ſeen in the beginning of the duodenum, and the villous membrane at this part was thickened.

" In two other perſons who died at a more advanced period of the diſeaſe, the ſtomach appeared ſpotted in many places with extravaſations, and the inflammation diſappeared. It contained, as did alſo the inteſtines, a black liquor, which had been vomited

vomited and purged before death. This black liquor appears clearly to be an altered ſecretion from the liver; for a fluid in all reſpects of the ſame qualities was found in the gall-bladder. This liquor was ſo acrid, that it induced conſiderable inflammation and ſwelling on the operator's hands, which remained ſome days. The villous membrane of the inteſtines in theſe laſt two bodies was found inflamed in ſeveral places.

"The liver was of its natural appearance, excepting in one of the laſt perſons, on the ſurface of which a very few diſtended veins were ſeen: all the other abdominal viſcera were of a healthy appearance.

"The external ſurface of the ſtomach as well as of the inteſtines, was quite free from inflammation; the veins being diſtended with blood, which appeared through the tranſparent peritoneum, gave them a dark colour.

"The ſtomach of thoſe who died early in the diſeaſe was always contracted; but in thoſe who died at a more advanced period of it, where extravaſations appeared, it was diſtended with air."

P. S. PHISICK,
J. CATHRALL."

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I have before remarked that theſe diſſections were made early in the diſorder, and that Dr Annan attended a diſſection of a body at Buſhhill ſome time afterwards, in which an unuſual turgeſcence appeared in the veſſels of the brain.

Thus far have I delivered the hiſtory of the yellow fever as it affected the human body with ſickneſs and death. I ſhall now mention a few of thoſe circumſtances of public and private diſtreſs which attended it. I have before remarked, that the firſt reports of the exiſtence of this fever were treated with neglect or contempt. A ſtrange apathy pervaded all claſſes of people. While I bore my ſhare of reproach for "terrifying our citizens with imaginary danger," I anſwered it by lamenting "that they were not terrified enough." The publication from the college of phyſicians ſoon diſſipated this indifference and incredulity. Fear or terror now ſat upon every countenance. The diſeaſe appeared in many parts of the town, remote from the ſpot where it originated; although in every inſtance it was eaſily traced to it. This ſet the city in motion. The ſtreets and roads leading from the city were crouded with families flying in every direction for ſafety to the country. Buſineſs began to languiſh. Water-ſtreet between Market and Race-ſtreets became a deſart.

The

The poor were the firſt victims of the fever. From the ſudden interruption of buſineſs, they ſuffered for a while from poverty, as well as diſeaſe. A large and airy houſe at Buſh-hill about a mile from the city, was opened for their reception. This houſe, after it became the charge of a committee appointed by the citizens on the 14th of September, was regulated and governed with the order and cleanlineſs of an old and eſtabliſhed hoſpital. An American and French phyſician had the excluſive medical care of it after the 22d of September.

The contagion after the ſecond week in September, ſpared no rank of citizens. Whole families were confined by it. There was a deficiency of nurſes for the ſick, and many of thoſe who were employed were unqualified for their buſineſs. There was likewiſe a great deficiency of phyſicians from the deſertion of ſome, and the ſickneſs and death of others. At one time, there were only three phyſicians who were able to do buſineſs out of their houſes, and at this time, there were probably not leſs than 6,000 perſons ill with the fever.

During the firſt three or four weeks of the prevalence of the diſorder, I ſeldom went into a houſe

houſe the firſt time, without meeting the parents or children of the ſick in tears. Many wept aloud in my entry, or parlour, who came to aſk for advice for their relations. Grief, after awhile deſcended below weeping, and I was much ſtruck in obſerving that many perſons ſubmitted to the loſs of relations and friends, without ſhedding a tear, or manifeſting any other of the common ſigns of grief.

A chearful countenance was ſcarcely to be ſeen in the city for ſix weeks. I recollect once in entering the houſe of a poor man, to have met a child of two years old that ſmiled in my face. I was ſtrangely affected with this ſight (ſo diſcordant to my feelings and the ſtate of the city) before I recollected the age and ignorance of the child. I was confined the next day by an attack of the fever, and was ſorry to hear upon my recovery, that the father and mother of this little creature died, a few days after my laſt viſit to them.

The ſtreets every where diſcovered marks of the diſtreſs that pervaded the city. More than one half the houſes were ſhut up, although not more than one third of the inhabitants had fled into the country. In walking for many hundred yards, few perſons were met, except ſuch as were in queſt of a phyſician,

a phyſician, a nurſe, a bleeder, or the men who buried the dead. The hearſe alone kept up the remembrance of the noiſe of carriages or carts in the ſtreets. Funeral proceſſions were laid aſide. A black man, leading, or driving a horſe, with a corpſe on a pair of chair wheels, with now and then half a dozen relations or friends following at a diſtance from it, met the eye in moſt of the ſtreets of the city at every hour of the day, while the noiſe of the ſame wheels paſſing ſlowly over the pavements, kept alive anguiſh and fear in the ſick and well, every hour of the night *.

* In the life of Thomas Story a celebrated preacher among the Friends, there is an account of the diſtreſs of the city in its infant ſtate from the prevalence of the yellow fever in the autumn of 1699, nearly like that which has been deſcribed I ſhall inſert the account in his own words. "Great was the fear that fell on all fleſh. I ſaw no lofty or airy countenance, nor heard any vain jeſting to move men to laughter. Every face gathered paleneſs, and many hearts were humbled, and countenances fallen, and ſunk, as ſuch that waited every moment to be ſummoned to the bar, and numbered to the grave." The ſame author adds that ſix, ſeven, and ſometimes eight died of this fever in a day for ſeveral weeks. His fellow traveller and companion in the miniſtry Roger Gill, diſcovered upon this occaſion an extraordinary degree of Chriſtian philanthropy. He publicly offered himſelf in one of the meetings of the Society as a ſacrifice for the people, and

But a more ſerious ſource of the diſtreſs of the city aroſe from the diſſentions of the phyſicians, about the nature and treatment of the fever. It was conſidered by ſome, as a modification of the influenza, and by others as the Jail fever. Its various grades, and ſymptoms were conſidered as ſo many different diſeaſes, all originating from different cauſes. There was the ſame contrariety in the practice of the phyſicians that there was in their principles. The newſpapers conveyed accounts of both to the public, every day. The minds of the citizens were diſtracted by them, and hundreds ſuffered and died from the delays which were produced by an erroneous opinion of a plurality of diſeaſes in the city, or by indeciſion in the choice, or a want of confidence in the remedies of their phyſician.

The ſcience of medicine is related to every thing, and the philoſopher as well as the Chriſtian will be gratified by knowing the effects of a great and mortal epidemic upon the morals of a people. It was ſome alleviation of the diſtreſs

and prayed that "God would pleaſe to accept of his life for them, that a ſtop might be put to the contagion." He died of the fever a few days afterwards.

produced

produced by it, to obſerve its influence upon the obligations of morality and religion. It was remarked during this time, by many people that the name of the Supreme Being was ſeldom profaned either in the ſtreets, or in the intercourſe of the citizens with each other. Two robberies only, and thoſe of a trifling nature, occured in nearly two months, although many hundred houſes were expoſed to plunder, every hour of the day and night. Many of the religious ſocieties met two or three times a week, and ſome of them every evening, to implore the interpoſition of heaven to ſave the city from deſolation. Humanity and charity kept pace with devotion. The public have already ſeen accounts of their benevolent exerciſes in other publications. It was my lot to witneſs the uncommon activity of thoſe virtues upon a ſmaller ſcale. I ſaw little to blame, but much to admire and praiſe in perſons of different profeſſions, both ſexes, and of all colours. It would be foreign to the deſign of this work, to draw from the obſcurity which they ſought, the many acts of humanity and charity, of fortitude, patience, and perſeverance which came under my notice. They will be made public, and applauded elſewhere.

But the virtues which were excited by our calamity, were not confined to the city of Philadelphia.

phia. The United States wept for the diſtreſſes of their capital. In ſeveral of the ſtates, and in many cities, and villages, days of humiliation and prayer were ſet apart to ſupplicate the Father of mercies in behalf of our afflicted city. Nor was this all. From nearly every ſtate in the Union, the moſt liberal contributions of money, proviſions, and fuel, were poured in for the relief and ſupport of ſuch as had been reduced to want, by the ſuſpenſion of buſineſs, as well as by ſickneſs, and the death of friends.

The number of deaths between the firſt of Auguſt and the ninth of November, amounted to four thouſand and forty four. I ſhall here inſert a regiſter of the number which occurred on each day, beginning on the firſt of Auguſt and ending on the ninth of November. By comparing it with the regiſter of the weather, it will ſhew the influence of the latter on the diſeaſe. Several of the deaths in Auguſt were from other acute diſorders, and a few in the ſucceeding months were from ſuch as were of a chronic nature.

		died.
August	1	9
—	2	8
—	3	9
—	4	10
—	5	10
—	6	3
—	7	12
—	8	5
—	9	11
—	10	6
—	11	7
—	12	5
—	13	11
—	14	4
—	15	9
—	16	7
—	17	6
—	18	5
—	19	9
—	20	7
—	21	8
—	22	13
—	23	10
—	24	17
—	25	12
—	26	17
—	27	12
—	28	22
—	29	24
—	30	20
—	31	17
September	1	17
—	2	18
—	3	11
—	4	23
—	5	20
—	6	24
—	7	18
		456

		died
Brought forward		456
September	8	42
—	9	32
—	10	29
—	11	23
—	12	33
—	13	37
—	14	48
—	15	56
—	16	67
—	17	81
—	18	68
—	19	61
—	20	67
—	21	57
—	22	76
—	23	68
—	24	96
—	25	87
—	26	52
—	27	60
—	28	51
—	29	57
—	30	63
October	1	74
—	2	66
—	3	78
—	4	58
—	5	71
—	6	76
—	7	82
—	8	90
—	9	102
—	10	93
—	11	119
—	12	111
—	13	104
—	14	81
		2972

		died.
Brought forward		2972
October	15	80
—	16	70
—	17	80
—	18	59
—	19	65
—	20	55
—	21	59
—	22	82
—	23	54
—	24	38
—	25	35
—	26	23
—	27	13
		3685

		died.
Brought forward		3685
October	28	24
—	29	17
—	30	16
—	31	21
November	1	13
—	2	21
—	3	15
—	4	15
—	5	14
—	6	11
—	7	15
—	8	8
—	9	6
	Total,	3881*

From this table it appears that the principal mortality was in the second week of October. A general expectation had obtained, that cold weather was as fatal to the contagion of this fever as heavy rains. The usual time for its arrival had come, but the weather was still not only moderate, but warm. In this awful situation, the stoutest hearts began to fail. Hope sickened, and despair succeeded distress in almost every countenance. On the *fifteenth* of October it pleased God to

* In the above accounts there is a deficiency of returns from several grave-yards of 163. It is supposed in addition to the number of persons who died in the city that 500 persons who had caught the fever in the city, perished by it, in different parts of the country.

alter

alter the ſtate of the air. The clouds at laſt dropped health in ſhowers of rain, which continued during the whole day, and which were ſucceeded for ſeveral nights afterwards by cold and froſt. The effects of this change in the weather, appeared firſt in the ſudden diminution of the ſick, for the deaths continued for a week afterwards to be numerous, but they were of perſons who had been confined before, or on the day in which the change had taken place in the weather.

The appearance of this rain was like a dove with an olive branch in its mouth, to the whole city. Public notice was given of its beneficial effects in a letter ſubſcribed by the mayor, of Philadelphia, who acted as preſident of the committee, to the mayor of New York. I ſhall inſert the whole of this letter. In contains, beſides the above information, a record of the liberality of that city, to the diſtreſſed inhabitants of Philadelphia.

"SIR,

"I AM favoured with your letter of the 12th inſtant, which I have communicated to the Committee for the relief of the poor and afflicted of this city.

"It is with peculiar ſatisfaction that I execute their requeſt, by making in their name, on behalf of our ſuffering fellow citizens, the moſt grateful acknowledgements, for the ſeaſonable benevolence of the Common-Council of the city of New-York. Their ſympathy is balm to our wounds.

"We acknowledge the divine interpoſition, whereby the hearts of ſo many around us have been touched with our diſtreſs, and have united in our relief.

"May the almighty diſpoſer of all events be graciouſly pleaſed to protect your citizens from the dreadful calamity with which we are now viſited; whilſt we humbly kiſs the rod, and improve by the diſpenſation.

"The part, ſir, which you perſonally take in our afflictions, and which you have ſo pathetically expreſſed in your letter, excites in the breaſts of the Committee the warmeſt ſenſations of fraternal affection.

"The refreſhing rain which fell the day before yeſterday, though light, and the cool weather which hath ſucceeded, appear to have given a check to the prevalence of the diſorder; of this we have

have ſatisfactory proofs; as well in the decreaſe of the funerals, as in the applications for removal to the hoſpital.

"I have at your requeſt, this day drawn upon you, at ſight, in favour of the Preſident and Directors of the Bank of North America, for the ſum of five thouſand dollars, the benevolent donations of the Common-Council of the city of New-York

"With ſentiments of the greateſt eſteem and regard,

I am, Sir,

Philadelphia, Oct. 17, 1793. } Your moſt obedient humble ſervant,

MATTH. CLARKSON."

Richard Varick, Mayor of the city of New-York. }

It is no new thing for the bilious fevers of every deſcription, to be checked, or ſubdued by *wet* and *cold* weather.

The yellow fever which raged in Philadelphia in 1699, and which is taken notice of by Thomas Story in his Journal, ceaſed about the latter end

of October, or the beginning of November. Of this there are ſatisfactory proofs in the regiſter of the interments in the Friends' burying ground, and in a letter dated November 9th, Old Style, 1699, from Iſaac Norris to one of his correſpondents, which his grand-ſon Mr. Joſeph P. Norris, politely put into my hands, with ſeveral others, which mention the diſeaſe, and all written in that memorable year in Philadelphia. The letter ſays, "It has pleaſed God to put a ſtop to our ſore viſitation, and town and country are now generally healthy." The ſame diſeaſe was checked by wet and cold weather in the year 1741. Of this there is a proof in a letter from Dr. Franklin to one of his brothers, who ſtopped at Burlington, on his way from Boſton to Philadelphia on account of the fever, until he was aſſured by the Doctor, that a thunder guſt which had cooled the air, had rendered it ſafe for him to come into the city*. Mr.

* From a ſhort note in the regiſter of the interments in the Friends' burying-ground, it appears, that the fever this year made its firſt appearance in the month of June. The following is a copy of that note. "12th of the 6th month (O. S.) 1741, a malignant yellow fever now ſpreads much." Beſides that note, there is the following; "25th of the 7th month (O. S.) 1741, many who died of the above diſtemper, were perſons lively, and ſtrong, and in the prime of their time."

Lynford

Lynford Lardner in a letter to one of his Engliſh friends, dated September 24th, 1747, Old ſtyle, after mentioning the prevalence of the fever in the city, ſays, "the weather is now much cooler, and thoſe under the diſorder revive. The ſymptoms are leſs violent, and the fever gradually abates."

I have in vain attempted to procure an account of the time of the commencement of cold weather, in the autumn of 1762. In the ſhort hiſtory of the fever of that year, which I have inſerted from my note book, I have ſaid that it continued to prevail in the months of November and December. The regiſter of the interments in the Friends' burying ground in thoſe months, confirms that account. They were nearly as numerous in November and December, as in September and October. Viz. in September 22, in October 27, in November 19, and in December 26.

The bilious remitting fever of 1780, yielded to cool weather, accompanied by rain and an eaſterly wind*.

Medical Inquiries and Obſervations, London Edition, p. 106.

Sir John Pringle will furniſh ample ſatisfaction, to ſuch of my readers as wiſh for more proofs of the efficacy of heavy rains, and cold weather, in checking the progreſs and violence of autumnal remitting fevers*

From the 15th of October, the diſeaſe not only declined, but aſſumed more obvious inflammatory ſymptoms. It was, as in the beginning, more neceſſarily fatal where left to itſelf, but it yielded more certainly to art, than it did a few weeks before. The duration of it was now more tedious, than in the warmer weather.

There were a few caſes of yellow fever in November and December, after the citizens who had retired to the country, returned to the city.

I heard of only three perſons who returned to the city being infected with the diſorder; ſo completely was the contagion deſtroyed in the courſe of a few weeks.

In conſequence of a proclamation by the Governor, and a recommendation by the Clergy of Philadelphia, the 12th of December was obſerved

* P. 5, 56, 180, and 323.

as

as a day of thankſgiving throughout the ſtate for the extinction of the diſorder in the city.

It was eaſy to diſtinguiſh in walking the ſtreets, the perſons who had returned from the country to the city, from thoſe who had remained in it during the prevalence of the fever. The former appeared ruddy, and healthy, while the latter appeared of a pale or ſallow colour.

It afforded a ſubject of equal ſurpriſe and joy to behold the ſuddenneſs with which the city recovered its former habits of buſineſs. In the courſe of ſix weeks after the diſeaſe had ceaſed, nothing but freſh graves, and the black dreſſes of many of the citizens, afforded a public trace of the diſtreſs which had ſo lately prevailed in the city.

The month of November, and all the winter months which followed the autumnal epidemic, were in general healthy. A catarrh affected a number of people in November. I ſuſpected it to be the influenza which had revived from a dormant ſtate; and which had not ſpent itſelf when it yielded to the predominance of the yellow fever. This opinion derives ſome ſupport from a curious fact related by the late Mr. Hunter of the revival of the ſmall-pox in a patient, in whom it had been ſuſpended

ſuſpended for ſome time by the meaſles*. The few fevers which prevailed in the winter were highly inflammatory. The ſmall-pox in the natural way was in ſeveral inſtances confluent; and in one or two fatal. I was prepared to expect this inflammatory diatheſis in the fevers of the winter; for I had been taught by Dr. Sydenham, that the diſeaſes which follow a great and mortal epidemic, partake more or leſs of its general character. But the diſeaſes of the winter had a peculiarity ſtill more extraordinary; and that was, many of them had ſeveral of the ſymptoms of the yellow fever, particularly a puking of bile, dark-coloured ſtools, and a yellow eye. Mr. Samuel D. Alexander, a ſtudent of medicine from South Carolina, who was ſeized with a pneumony about Chriſtmas, had with a yellow eye, a dilated pupil, and a hard pulſe which beat only 50 ſtrokes in a minute. His blood was ſuch as I had frequently obſerved in the yellow fever. Dr. Griffitts informed me, that he attended a patient on the 9th of January in a pneumony, who had an univerſal yellowneſs on his ſkin. I met with a caſe of pneumony on the 20th of the ſame month, in which I obſerved the ſame degrees of redneſs

* Introduction to a Treatiſe on the Venereal Diſeaſe, p. 3. of the American Edition.

in

in the eyes that were common in the yellow fever. My pupil Mr. Coxe, loſt blood in an inflammatory fever, on the 18th of February, which was diſſolved. Mr. William Innis, the brewer, had a deep yellow colour in his eyes, on the fourth day of a pneumony, on the 27th of the ſame month; and Mr. Magnus Miller had the ſame ſymptom of a ſimilar diſorder, on the 16th of March. None of theſe bilious and anomalous ſymptoms of the inflammatory fevers of the winter and ſpring ſurpriſed me. I had been early taught by Dr. Sydenham, that the epidemics of autumn often inſinuate ſome of their ſymptoms into the winter diſeaſes which follow them. Dr. Cleghorn informs us, that " the pleuriſies which ſucceeded the autumnal tertians in Minorca, were accompanied by a vomiting and purging of green or yellow bilious matters*.

It belongs to powerful epidemics to be followed by ſome diſeaſes after they diſappear, as well as to run into others at their firſt appearance. In the former caſe it is occaſioned by a peculiar ſtate of the body, created by the epidemic conſtitution of the air, not having been changed by the weather which ſucceeded it. The diſeaſes which partake of

* Page 273.

the

the departed epidemic, reſemble the drops which follow a heavy ſhower of rain, or the waves which ſucceed a violent gale of wind on the ocean.

The weather in March reſembled that of May; while the weather in April reſembled that of March in common years. A raſh prevailed in many families in April, accompanied in a few caſes by a ſore throat. It was attended with an itching, a redneſs of the eyes, and a ſlight fever in a few inſtances. The ſmall-pox by inoculation in this month was more mortal than in former years. However unimportant theſe facts may appear at this time, future obſervations may perhaps connect them with a ſimilar conſtitution of the air which produced our late autumnal epidemic.

The appearance of bilious ſymptoms in the diſeaſes of the winter, excited apprehenſions in ſeveral inſtances of the revival of the yellow fever. The alarms though falſe, ſerved to produce vigilance and induſtry in the corporation, in airing and purifying ſuch houſes and articles of furniture as belonged to the poor; and which had been neglected in the autumn, after the ceaſing of the diſeaſe.

The

The modes of purifying houſes, beds, and clothes were various. Fumigations of nitre and aromatic ſubſtances were uſed by ſome people. Burying infected articles of furniture under ground, and baking them in ovens, were uſed by others. Some deſtroyed all their beds and clothing that had been infected, or threw them into the Delaware. Many white-waſhed their walls, and painted the wood-work of their houſe. I did not conceive the contagion required all, or any of thoſe means to deſtroy it. I believed *cold* and *water* to be ſufficient for that purpoſe. I therefore adviſed the keeping the windows of infected rooms open night and day, for a few days; to have the floors and walls of houſes well waſhed; and to expoſe beds and ſuch articles of houſehold furniture as might be injured by waſhing, upon the bare earth for a week or two, taking care to turn them every day. I uſed no other methods of deſtroying the accumulated contagion in my houſe and furniture, and experience ſhowed that they were ſufficient. Thoſe branches of my family who had been abſent during the prevalence of the fever (amounting to eleven in number) returned to the city on the 22d of November, and occupied the houſe and beds which had been highly infected, without ſuffering a moment's indiſpoſition from it. The weather of the winter favoured

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the complete deſtruction of the contagion. It was alternately moderate and cold; by which means the contagion, if accidentally revived by the former, was more effectually deſtroyed by the latter ſtate of the air.

It is poſſible a portion of the contagion may exiſt in clothes or bedding, under ſuch circumſtances of warmth, as to be excited into action in the courſe of the approaching ſummer and autumn; but it cannot ſpread without a correſponding conſtitution of the atmoſphere. A trunk full of infected clothes, the property of Mr James Bingham, who died of the yellow fever in one of the Weſt India iſlands about 40 years ago, was opened ſome months after they were received by his friends, by a young man who lived in his brother's family. This young man took the diſeaſe, and died; but without infecting any of the family; nor did the diſeaſe ſpread afterwards in the city.

The father of Mr. Joſeph Paſchall was infected with the yellow fever of 1741, by the ſmell of a bed in paſſing through Norris's Alley, in the latter end of December, after the diſeaſe had left the city. He died on the 25th of the month, but without reviving the fever in the city, or even infecting his family.

In

In a letter from Dr. Senter of Newport, dated January 7th, 1794, I find the following fact, which I ſhall communicate in his own words. It is introduced to ſupport the principle, that the yellow fever cannot ſpread in any country without the concurrence of a prediſpoſing conſtitution of air. "This place (ſays the Doctor) has traded formerly very much to the Weſt India iſlands, and more or leſs of our people have died there every ſeaſon, when the diſeaſe prevails in thoſe parts. Clothes of theſe unfortunate people have been repeatedly brought home to their friends, without any accident happening to them."

It is not peculiar to the contagion of the yellow fever to require the concurrence of a morbid conſtitution of the air to excite it into action. The contagion of the plague periſhed twice in the city of Larnica, without ſpreading, from the abſence of that neceſſary ſtate of the air, in the year 1759*. It is remarkable, that a morbid conſtitution of the air ſometimes exiſts under very different, and frequently oppoſite circumſtances of its ſenſible qualities, and that the *ſame* conſtitution of the air is often protracted for two, three, four, and even ſix years.

* P. Ruſſel, p. 4.

Several

Several perſons it is ſaid died of the yellow fever in the ſummer and autumn of 1763, the year after it had been epidemic in our city. I witneſſed the ſymptoms which immediately preceded the death of one of them. Whether the diſeaſe in this ſporadic caſe was produced by a revival of the contagion, or by miaſmata generated in the city, I am unable to determine.

Dr. Mitchell informs us, that the diſeaſe appeared in Virginia in the ſpring of 1742, after the autumn of 1741. In this caſe the contagion was probably kept alive during the winter by the want of cleanlineſs in the negro-quarters; and perhaps by moderate weather.

This is the only fact which ſupports the fears of the return of the diſeaſe to our city, in the courſe of the preſent year. To aid our hopes, that this will not be the caſe, I have great pleaſure in adding, that it has never prevailed in ſucceſſive years either in this city or in Charleſton; in one of which there are records of its having been five, and in the other four times epidemic.

I feel with my reader the fatigue of this long detail of facts, and equal impatience with him, to proceed to the hiſtory of the treatment of the fe-

ver; but I muſt beg leave to detain him a little longer from that part of the work, while I reſume the ſubject of the origin of the fever. It is an intereſting queſtion, as it involves in it the means of preventing a return of the diſorder.

Soon after the fever left the city, the governor of the ſtate addreſſed a letter to the College of Phyſicians, requeſting to know their opinion of its origin; if imported; from what place; at what time; and in what matter. The deſign of this inquiry was to procure ſuch information as was proper to lay before the legiſlature, in order to improve the laws for preventing the importation or generation of infectious diſeaſes, or to enact new ones, if neceſſary for that purpoſe. To the governor's letter, the College of Phyſicians ſent the following anſwer:

"SIR,

"IT has not been from a want of reſpect to yourſelf, nor from inattention to the ſubject, that your letter of the 30th ult. was not ſooner anſwered; but the importance of the queſtions propoſed, has made it neceſſary for us to devote a conſiderable portion of time and diligence to this buſineſs, in order to arrive at a ſafe and juſt concluſion.

" No inſtance has ever occurred of the diſeaſe called the *yellow fever*, having been generated in this city, or in any other part of this ſtate, as far as we know; but there have been frequent inſtances of its having been imported, not only into this, but into other parts of North America, and prevailing there a certain period of time; and from the riſe, progreſs, and nature of the malignant fever, which began to prevail here about the beginning of laſt Auguſt, and extended itſelf gradually over a great part of the city, we are of opinion that this diſeaſe was imported into Philadelphia, by ſome of the veſſels which arrived in the port after the middle of July. This opinion we are further confirmed in by various accounts we have received from the beſt authorities we could procure upon the ſubject.

Signed by order of the College of Phyſicians,

November 26th, 1793. } JOHN REDMAN, PRESIDENT.

To the Governor of Pennſylvania.

Three members of the College diſſented from the report contained in this letter. They were Dr. Redman the Preſident of the College, Dr. Foulke, and Dr. Leib.

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I am ſorry to meet my brethren upon every queſtion of our late epidemic in a field of controverſy. In the preſent they will have a great advantage over me, for the prejudices of the citizens of Philadelphia are in their favour. Loathſome and dangerous diſeaſes have been conſidered by all nations as of foreign extraction. The venereal diſeaſe and the leproſy have no native country, if we believe all the authors who have written upon their origin. Proſper Alpinus, derives the almoſt yearly plagues of Cairo from Syria, and Dr. Warren flattered the people of Barbadoes, by an attempt to perſuade them that the yellow fever of the Weſt Indies, was originally imported from Siam. This principle of referring the origin of the evils of life, from ourſelves to others, is univerſal. It diſcovered itſelf in Paradiſe, and it is every where, an eſſential feature in the character of man.

I have aſſerted in the introduction to the hiſtory of this fever, that I believed it to have been generated in our city; I ſhall now deliver my reaſons for that belief.

1. The yellow fever in the Weſt Indies and in all other countries where it is endemic, is the offſpring of vegetable putrefaction. Heat, exerciſe, and intemperance in drinking, (ſays Dr. Lind) *diſ-*

poſe to this fever in hot climates, but they do not produce it, without the concurrence of a remote cauſe. This remote cauſe exiſts at all times, in ſome ſpots of the Iſlands, but in other parts of even the ſame iſlands, where there are no marſh exhalations, the diſeaſe is unknown. I ſhall not waſte a moment in enqiring into the truth of Dr. Warren's account of the origin of this fever. It is fully refuted by Dr. Hillary, and it is treated as chimerical by Dr. Lind. They have very limited ideas of the hiſtory of this fever who ſuppoſe it to be peculiar to the Eaſt or Weſt Indies. It was generated in Cadiz after a hot and dry ſummer in 1764, and in Penſacola in 1765*. The tertian fever of Minorca, when it attacked Engliſhmen put on the uſual ſymptoms of the yellow fever†. In ſhort, this diſeaſe, appears according to Dr. Lind, in all the ſouthern parts of Europe, after hot, and dry weather‡.

2. The ſame cauſes (under like circumſtances) muſt always produce the ſame effects. There is nothing in the air of the Weſt Indies above other hot countries, which diſpoſes it to produce a yel-

* Lind on the Diſeaſes of Hot Climates, p. 36 and 124.

† Cleghorn, page 176.

‡ Diſeaſes of Hot Climates, page 123.

low

low fever. Similar degrees of heat, acting upon dead and moiſt vegetable matters, are capable of producing it, together with all its various modifications, in every part of the world. In ſupport of this opinion, I ſhall tranſcribe part of a letter from Dr. Miller, of the Delaware ſtate.

" Dover, *Nov.* 5, 1793.

DEAR SIR,

SINCE the middle of laſt July, we have had a Bilious Cholic epidemic in this neighbourhood which exhibits phenomena very ſingular in this climate; and ſo far as I am informed, unprecedented in the medical records, or popular traditions of this country. To avoid unneceſſary details, it will ſuffice at preſent to obſerve, that the diſeaſe on this occaſion has aſſumed not only all the eſſential characters, but likewiſe all the violence, obſtinacy, and malignity deſcribed by the Eaſt and Weſt India practitioners. If any difference can be obſerved, it ſeems here to manifeſt higher degrees of ſtubbornneſs and malignity, than we uſually meet in the hiſtories of tropical writers. In the courſe of the diſeaſe, not only extreme conſtipation, frequent vomiting, and the moſt excruciating pains of the bowels and limbs, harraſs the unhappy patient; but to theſe ſucceed paralyſis, convulſions, &c. and almoſt always uncommon

muſcular debility,—oppreſſion of the præcordia, &c. are the conſequence of a ſevere attack. Bile diſcharged in enormous quantities, conſtantly aſſumes the moſt corrupted and acrimonious appearances, commonly æruginous in a very high degree, and ſometimes quite atrabilious.

"The inference I mean to draw from the phænomena of this diſeaſe, as it appears in this neighbourhood, and which I preſume will alſo apply to your epidemic, is THIS, that from the uncommon protraction and intenſeneſs of our ſummer and autumnal heats, but principally from the unuſual drought; we have had ſince the middle of July, a near approach to a TROPICAL ſeaſon, and that of conſequence we ought not to be ſurprized if tropical diſeaſes, even of the moſt malignant nature, are ENGENDERED amongſt us."

To the above information it may be added, that the dyſentery which prevailed during the late autumn in ſeveral of the villages of Pennſylvania, was attended with a malignity and mortality, unknown before in any part of the ſtate. I need not pauſe to remark that this dyſentery aroſe from putrid exhalation, and that it is like the bilious colic, only a modification of one original genus of bilious fever.

But

But further, a malignant fever reſembling that which was epidemic in our city, prevailed during the autumn in many parts of the United States, viz. at Lynn in Maſſachuſetts, at Weatherfield and Coventry in Connecticut, at New Galloway in the ſtate of New York, on Walkill and on Penſocken creeks in New Jerſey, at Harriſburgh, and Hummelſtown in Pennſylvania, in Caroline county in Maryland, on the South branch of the Potowmac in Hardie county, alſo in Lynchburgh and in Alexandria in Virginia, and in ſeveral counties in North Carolina. In none of theſe places was there a ſuſpicion of the diſeaſe being imported from abroad, or conveyed by an intercourſe with the city of Philadelphia.

It is no objection to the inference which follows from theſe facts, that the common remitting fever was not known during the above period in the neighbourhood of the city, and in many other parts of the ſtate, where it had uſually appeared in the autumnal months. There is a certain combination of moiſture with heat, which is eſſential to the production of the remote cauſe of a bilious fever. Where the heat is ſo intenſe, or of ſuch long duration as wholly to diſſipate moiſture, or when the rains are ſo great as totally to overflow the

marſhy ground, or to waſh away putrid maſſes of matter, no fever can be produced.

Dr. Dazilles, in his treatiſe upon the diſeaſes of the Negroes in the Weſt Indies, informs us, that the RAINY ſeaſon is the moſt healthy at Cayenne, owing to the neighbouring moraſſes being DEEPLY overflowed—whereas at St. Domingo, a DRY ſeaſon is moſt productive of diſeaſes; owing to its favouring thoſe degrees of moiſture which produce morbid exhalations. Theſe facts will explain the reaſon why, in certain ſeaſons, places which are naturally healthy in our country, become ſickly, while thoſe places which are naturally ſickly, eſcape the prevaling epidemic. Previouſly to the diſſipation of the moiſture from the putrid maſſes of vegetable matters in our ſtreets, and in the neighbourhood of the city, there were (as ſeveral practitioners can teſtify) many caſes of mild remittents, but they all diſappeared about the firſt week in September.

It is worthy of notice, that the yellow fever prevailed in Virginia, in the year 1741, and in Charleſton in South Carolina in the year 1699, in both which years, it prevailed in Philadelphia. Its prevalence in Charleſton is taken notice of in a letter

letter dated November 18th, O. S. 1699, from Iſaac Norris to one of his correſpondents. The letter ſays, that " 150 perſons had died in Charleſton in a few days," that " the ſurvivors fled into the country," and that " the town was thinned to a very few people." Is it not probable, from the prevalence of this fever twice in two places in the ſame years, that it was produced (as laſt year) by a general conſtitution of air, co-operating with miaſmata, which favoured its generation in different parts of the continent? But again, ſuch was the ſtate of the air in the ſummer of 1793, that it prediſpoſed other animals to diſeaſes, beſides the human ſpecies. In ſome parts of New Jerſey, a diſorder prevailed with great mortality among the horſes, and in Virginia among the cows, during the laſt autumn. The urine in both was yellow.—Large abſceſſes appeared in different parts of the body in the latter animals, which when opened, diſcharged a yellow ſerous fluid. From the colour of theſe diſcharges, and of the urine, the diſeaſe got the name of the *yellow water*.

3. I have before remarked that a quantity of damaged coffee, was expoſed at a time (July the 24th) and in a ſituation (on a wharf, and in a dock) which favoured its putrefaction, and exhalation. Its ſmell was highly putrid and offenſive,

ſive, inſomuch that the inhabitants of the houſes in Water and Front ſtreets, who were near it, were obliged in the hotteſt weather to exclude it, by ſhutting their doors and windows. Even perſons, who only walked along thoſe ſtreets, complained of an intolerable fœtor, which upon enquiring, was conſtantly traced to the putrid coffee. It ſhould not ſurpriſe us, that this ſeed, ſo inoffenſive in its natural ſtate, ſhould produce, after its putrefaction a violent fever. The records of medicine furniſh inſtances of ſimilar fevers being produced, by the putrefaction of many other vegetable ſubſtances. Fourteen men out of ſixteen, periſhed by a malignant fever, a few years ago, at the iſland of Tortola, from the effluvia generated by ſome putrefied potatoes, which were taken out of the hold of a Liverpool veſſel. "The effluvia (ſays Dr. Zimmerman from a little heap of flax, has been known to occaſion a malignant fever, which proved fatal to the family, in which it firſt began, and afterwards ſpread its *contagion* through a whole country." Dr. Rodgers in his treatiſe upon the diſeaſes of Cork, mentions a malignant fever which ſwept away a great number of the ſtudents of Wadham College in Oxford, "The ſingularity of the caſe (adds the Doctor) engaged all the gentlemen of the faculty, in a ſerious inquiry into the cauſes of ſo remarkable

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an effect, and all agreed that the *contagious* infection arose from the putrefaction of a vast quantity of cabbages thrown into a heap out of the several gardens near the College." Lancisi relates, that one end of the city of Rome was nearly desolated by the effluvia of some rotted hemp, which lay in the neighbourhood of the city. The same author remarks, that "fevers often prevail at constantinople, which owe their origin to the hemp which is brought from Cairo, and which is put wet into the public granaries, and suffered to ferment during the summer. It is afterwards sold, and the seeds of those diseases are afterwards spread among the people." Many other facts, might be adduced of radishes, turnips, garlic, and sundry other vegetables, generating by putrefaction, fevers, similar to those which have been mentioned.

4. The rapid progress of the fever from Water-street, and the courses through which it travelled into other parts of the city, afford a strong evidence that it was at first propagated chiefly by exhalation from the putrid coffe. It is remarkable that it passed first through those alleys, and streets which were in the course of the winds that blew across the dock and wharf where the coffee lay, and that persons were affected at a much greater distance from Water-street by that means, than

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was afterwards known by means of the contagion which was generated by infected persons.

5. Many persons who had worked, or even visited in the neighbourhood of the exhalation from the coffee, early in the month of August, were indispoſed afterwards with ſickneſs, puking, and yellow ſweats, long before the air of Water-ſtreet was ſo much impregnated with the contagion, as to produce ſuch effects; and ſeveral patients whom I attended in the yellow fever declared to me, or to their friends, that their indiſpoſitions began exactly at the time they inhaled the offenſive effluvia of the coffee.

6. The firſt caſes of the yellow fever have been clearly traced to the ſailors of the veſſel who were firſt expoſed to the effluvia of the coffee. Their ſickneſs commenced with the day on which the coffee began to emit its putrid ſmell. The diſeaſe ſpread with the increaſe of the poiſonous exhalation. A journeyman of Mr. Peter Brown's, who worked near the corner of Race and Water-ſtreets, caught the diſeaſe on the 27th of July. Elizabeth Hill, the wife of a fiſherman was infected by only ſailing near the peſtilential wharf, about the firſt of Auguſt, and died at Kenſington on the 14th of the ſame month. Many other names might be mentioned

mentioned of perſons who ſickened during the laſt week in July or the firſt week in Auguſt, who aſcribed their illneſſes to the ſmell of the coffee. From three of thoſe perſons who came under my notice, the diſeaſe was evidently propagated by contagion: from one of them, to nearly a whole family, and from another, to a girl of eight years old, who was led by curioſity to examine the yellow colour which it was ſaid had appeared in the face of the infected perſon, after death.

7. It has been remarked that this fever did not ſpread in the country, when carried there by perſons who were infected, and who afterwards died with it. This I conceive was occaſioned, in part by the contagion being deprived of the aid of miaſmata from the putrid matter which firſt produced it in our city, and in part, by its being diluted, and thereby weakened by the pure air of the country. During four times in which it prevailed in Charleſton, in no one inſtance, according to Dr. Lining, was it propagated in any other part of the ſtate.

8. It is very remarkable that in the hiſtories of the diſorder which have been preſerved in this country, it has *ſix* times appeared about the firſt

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or middle of Auguſt, and declined, or ceaſed about the middle of October—viz. in 1732, 1739, 1745, and 1748 in Charleſton; in 1791 in New-York, and in 1793 in Philadelphia. This frequent occurrence of the yellow fever at the uſual period of our common bilious remittents, cannot be aſcribed to accidental coincidence, but muſt be reſolved in moſt caſes into the combination of more active miaſmata with the prediſpoſition of a tropical ſeaſon. In ſpeaking of a tropical ſeaſon, I include that kind of weather in which rains and heats are alternated with each other, as well as that, which is uniformly warm.

9. Several circumſtances attended the late epidemic, which do not occur in the Weſt-India yellow fever. It affected children as well as adults in common with our annual bilious fevers. In the Weſt Indies Dr. Hume tells us it never attacked any perſon under puberty. It had, moreover, many peculiar ſymptoms (as I have already ſhewn) which are not to be met with in any of the hiſtories of the Weſt-India yellow fever.

10. Why ſhould it ſurpriſe us to ſee a yellow fever generated amongſt us? It is only a higher grade of a fever which prevails every year in our

our city from vegetable putrefaction. It conforms in the difference of its degrees of violence, and danger to ſeaſon, as well as climate, and in this reſpect it is upon a footing with the ſmall-pox, the meaſles, the ſore-throat, and ſeveral other diſeaſes. There are few years paſs, in which a plethoric habit, and more active but limited miaſmata, do not produce Sporadic Caſes of true yellow fever in Philadelphia. It is very common in South and North Carolina and in Virginia, and there are facts which prove, that not only ſtrangers, but native individuals, and in one inſtance, a whole family have been carried off by it in the ſtate of Maryland. It proved fatal to one hundred perſons in the city of New-York in the year 1791, where it was evidently generated by putrid exhalation. The yellow colour of the ſkin, has unfortunately too often been conſidered as the characteriſtic mark of this fever, otherwiſe many other inſtances of its prevalence might be diſcovered, I have no doubt, in every part of the United States. I wiſh with Dr. Moſely, the term *yellow*, could be aboliſhed from the titles of this fever, for this colour is not only frequently abſent, but ſometimes occurs in the mildeſt bilious remittents. Dr Haller in his pathology, deſcribes an epidemic of this kind in Swiſſerland, in which this colour generally attended, and I have once ſeen it almoſt univerſal

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in a common bilious fever which prevailed in the American army in the year 1776.

If any thing could ſurpriſe me after reading the report of the College of Phyſicians that our late fever was imported, in ſpite of every poſſible evidence to the contrary, it would be the opinion which was delivered publicly by ſome leading members of the College, that no fever produced by vegetable putrefaction and exhalation, had ever been contagious. It is ſcarcely poſſible to open a practical book upon medicine, without meeting with facts which eſtabliſh a contrary opinion. The fevers generated by putrid cabbage, mentioned by Dr. Rodgers, and by putrid flax mentioned by Dr. Zimmerman, were both contagious. Dr. Lind aſcribes the yellow fever every where to marſh or putrid vegetable exhalations; and this fever, we know, ſpreads by contagion. Dr. Lind, Jun. eſtabliſhes the contagious nature of the marſh fever which prevailed in Bengal in the year 1762. I ſhall tranſcribe his words upon this ſubject. "Although marſh miaſmata (ſays he) firſt bring on the diſeaſe, yet contagion preſently ſpreads it, and renders it more epidemic. Thus the Drake Indiaman continued free from the diſorder for two weeks together, when ſhe had no communication with other ſhips; whereas as ſoon as the

diſorder was brought on board, many were ſeized with it within a few days in ſuch a manner as to leave no room to entertain the leaſt doubt concerning its peſtilential nature*."

Dr. Clark mentions a contagious malignant fever from marſh miaſmata, which prevailed at Prince's Iſland in the year 1771, and which afterwards infected the crew of the Grenville Indiaman†. The contagious peſtilential fever in France, ſo accurately deſcribed by Riverius, was produced by an exhalation from putrid vegetables, particularly hemp and flax‡. Even intermittents, the moſt frequent and the moſt numerous offſpring of marſh exhalation, are contagious. Of this there are many proofs in practical authors. Bianchi deſcribes an intermittent which was highly contagious at Wolfenbuttle in the year 1666§. Dr. Clark mentions a number of caſes in which this mild ſpecies of fever was propagated by contagion. Dr. Cleghorn has eſtabliſhed the contagious nature of intermittents by many facts. After mentioning numerous inſtances of their

* Page 35, 36.

† Obſervations on the Diſeaſes of Long Voyages to Hot Countries, vol. i. p. 123, 124.

‡ De Febre Peſtilenti, vol. ii. p. 97.

§ Hiſtor. Hepat. p. 745.

having ſpread in this way, he ſays, "Theſe tertians have as good a right to be called contagious as the meaſles, ſmall pox, or any other diſeaſe*." The United States, in common with other countries, have in many places exhibited proofs of the contagious nature of fevers, produced by putrid vegetable exhalations. The yellow fever which the citizens of New-York wiſely admit to have been generated in their city from vegetable putrefaction in the year 1791, ſpread by contagion†. The bilious fever which prevailed in Philadelphia in the year 1778, was evidently contagious; ſo were the bilious fevers which prevailed during the laſt autumn in Weathersfield, Harriſburgh, and on the ſouth branch of the Potowmac. I hope I ſhall be excuſed by the phyſicians of other ſtates (if this publication ſhould fall into their hands) for having employed a ſingle page in combating an error which is ſo obvious to common obſervation. My only deſign in expoſing it, is to prevent a repetition of its fatal influence in the only city in the world in which it has ever been believed or propagated.

* Page 152.

† Addoms's Inaugural Diſſertation on the Malignant Fever which prevailed in New-York, during the months of Auguſt, September, and October, in 1791, p. 7.

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I am far, however, from denying that this diſeaſe has not ſometimes been imported into our country. From the authority of Dr. Lind, it appears that this has once been the caſe in Philadelphia. In this reſpect it is upon a footing with the plague, which is both an imported and a generated diſeaſe, in the cities of the Eaſt. I am diſpoſed however to believe that the inſtances of the yellow fever being imported are very few, compared with thoſe of its being generated in our country. What makes this opinion probable is, that neither Great Britain nor Ireland have ever, to my knowledge, been infected by this fever, notwithſtanding their long and frequent commercial intercourſe with the Weſt India iſlands. The ſummers in each of thoſe countries, though ſeldom *hot* enough to generate a contagious yellow or bilious fever, are notwithſtanding *warm* enough to favour the propogation of an imported contagion of that diſorder. The jail fever which has more than once been introduced into our city in crowded ſhips from Holland, I ſuſpect has been ſometimes miſtaken for the yellow fever of the Weſt Indies. But I have another reaſon for diſcrediting ſome of the accounts of the importation of this fever, which have been handed down to us by former generations, and that is, the manner in which the College of Phyſicians decided upon the queſtion of the origin of

the diſeaſe now under conſideration. The governor of the ſtate requeſted in his letter to them, to know whether it was imported; if it were from what *place*, at *what time*, and in *what manner*. The report of the College of Phyſicians takes no notice of either of thoſe queſtions. In vain did Dr. Foulke call upon the College to be more definite in their anſwer to the governor's letter. They had faithfully ſought for the information required, but to no purpoſe. The character of their departed brother Dr. Hutchinſon, for capacity and vigilance in his office, as inſpector of ſickly veſſels, was urged without effect as an argument againſt the probability of the diſeaſe being imported. Public report had derived it from ſeveral different iſlands; had chaſed it from ſhip to ſhip, and from ſhore to ſhore; and finally conveyed it at different times into the city, alternately by dead and living bodies; and from theſe tales, all of which when inveſtigated, were proved to be without foundation, the College of Phyſicians compoſed their letter. It would ſeem from this conduct of the College as if medical ſuperſtition had changed its names, and that in accounting for the origin of peſtilential fevers, celeſtial, planetary, and demoniacal influence, had only yielded to the term—*importation*.

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Let not the reader reject the opinion I have delivered, becauſe it is oppoſed by ſo great a majority of the Phyſicians of Philadelphia. A ſingle phyſician ſupported an opinion of the exiſtence of the plague at Meſſina in the year 1743, in oppoſition to all the phyſicians (33 in number) of that city. They denied the diſeaſe in queſtion to exiſt, becauſe it was not accompanied by glandular ſwellings. Time ſhewed that they were all miſtaken, and the plague, which might probably have been checked at its firſt appearance by their united efforts, was by means of their ignorance, introduced with great mortality into every part of the city. This diſpoſition of phyſicians to limit the ſymptoms of ſeveral other diſeaſes, cannot be ſufficiently lamented. The frequent abſence of a yellow colour in our late epidemic, led to miſtakes which coſt the city of Philadelphia ſeveral hundred lives.

The report of the College of Phyſicians has ſerved to confirm me in an opinion, that the plagues which occaſionally deſolated moſt of the countries in Europe in former centuries, and which were always ſaid to be of foreign extraction, were in moſt inſtances of domeſtic origin. Between the years 1006 and 1680, the plague was epidemic 52 times all over Europe. It prevailed

14 times in the 14th century. The ſtate of Europe in this long period is well known. Idleneſs, a deficiency of vegetable aliment, a camp life from the frequency of wars, famine, an uncultivated and marſhy ſoil, ſmall cabins, and the want of cleanlineſs in dreſs, diet, and furniture, all concurred to generate peſtilential diſeaſes. The plagues which prevailed in London every year from 1593 to 1611, and from 1636 to 1649, I ſuſpect were generated in that city. The diminution of plagues in Europe, more eſpecially in London, appears to have been produced by the great change in the diet and manners of the people; alſo by the more commodious and airy forms of the houſes of the poor, among whom the plague *always* makes its firſt appearance. It is true, theſe plagues were ſaid by authors to have been imported either directly or indirectly from the Levant; but the proofs of ſuch importation were in moſt caſes as vague and deficient, as they were of the Weſt India origin of our late epidemic. The peſtilential fevers which have been mentioned have been deſcribed by authors, by the generic name of the plague; but ſome of them appear to have originated from putrid vegetable exhalations, and to have reſembled in moſt of their ſymptoms, the Weſt India and *American* yellow fever.

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I am aware that the opinion and facts which I have ſtated upon the origin of the late epidemic, are not popular with our citizens, but I did not dare to conceal them; for I am perſuaded a knowledge and belief of them, involve in their conſequences, the lives of millions that are yet unborn.

Commerce can be no more endangered than Religion, by the publication of philoſophical truth. On the contrary it muſt ſuffer moſt by the adoption of the traditional error which I have endeavoured to refute, for while the cauſe of a malignant fever is obvious to the ſenſes, it will be eaſy to guard againſt it; but while it is believed that the diſeaſe may be imported, and no body know from what *place*, at what *time*, and in *what manner*, we ſhall not only be careleſs in the midſt of filth and danger, but our city will always hold its character for health by a timid and precarious tenure. I am the more diſpoſed to expect forgiveneſs from my fellow citizens for this attempt to ſerve them, by the recollection of the ſudden change in the health of our city which followed the arching the offenſive dock between Front and Third ſtreets in the year 1782. By adviſing that meaſure (in which I ſtood nearly alone) I incurred the cenſure of ſeveral valuable citizens. The bills of mortality however ſoon ſhewed that the mea-

ſure was right, and I have ſince ſeen with great pleaſure the extraordinary healthineſs of our city, aſcribed by indifferent people, to that, among other cauſes.

The climate of our country can no more ſuffer than the commerce of our city, by this inveſtigation; for it fixes the late fever, and all the other malignant fevers of the United States, upon putrid vegetable exhalation. Without the matrix of putrid vegetable matters, there can no more be a bilious or yellow fever generated amongſt us, than there can be vegetation without earth—water or air. To aſcribe our late diſeaſe therefore to the excluſive influence of the atmoſphere, is a reflection upon our climate which is equally unphiloſophical and unjuſt.

Let it only be clearly proved and boldly aſſerted, that a bilious yellow fever has been, and may be generated in our country, under the circumſtances before mentioned, and the return of it, as alſo of common bilious and intermitting fevers may every where be prevented by a due attention to the cleanlineſs of the wharfs and ſuburbs, as well as the ſtreets of our cities, and towns; by draining and cultivating marſhy grounds in their neighbourhood, and in the neighbourhood of farm

farm houſes,—and where the laſt cannot be done, by ſheltering them from the current of vegetable exhalations, by means of a body of trees that are of ſpeedy growth. In this manner, malignant and deadly fevers have been baniſhed from moſt of the cities in Europe.

I have hinted in the courſe of this hiſtory, at the reſemblance which the yellow fever bears to the plague. Before I diſmiſs this part of my ſubject, I ſhall briefly enumerate the circumſtances, and ſymptoms, which belong to them in common; and afterwards mention thoſe which are peculiar to each of them. The utility of this digreſſion will, I hope appear hereafter, when I come to deliver the hiſtory of the *cure* of the yellow fever.—The principles which ſuggeſted and directed it, will apply alike to both diſeaſes.

The circumſtances and ſymptoms in which the plague and the yellow fever (as it lately appeared in our city) reſemble each other, are as follow:

In being accompanied and encreaſed by warm weather.

In affecting thoſe people moſt generally who follow occupations which expoſe them to be much heated.

heated. The bakers were great ſufferers by the plagues at Aleppo, deſcribed by Dr. P. Ruſſel.

In affecting perſons who are ſuddenly debilitated by fear or grief.

In affecting all ages; alſo the poor more than the rich; men more than women; and perſons of robuſt, more than thoſe of weakly habits.

In attacking with, and without premonitory ſymptoms.

In being excited by intemperance, and labour.

In being accompanied by a full, tenſe, depreſſed, regular, or an intermitting pulſe.

In being accompanied by hemorrhagies. Theſe are leſs frequent in the plague than in the yellow fever.——Abortions are alike common in both diſeaſes.

The following ſymptoms of our late yellow fever occur likewiſe in the plague.

Inflammation of the brain.

Inflam-

Inflammation, mortifications, and carbuncles in the alimentary canal and ſtomach.

Coſtiveneſs or diarrhœa. Copious ſweats in the beginning of the diſeaſe which afford relief.—A diſcharge of a blackiſh liquor from the ſtomach by vomiting, in the cloſe of the diſeaſe.

A moiſt white tongue, in its beginning, and a dry black tongue in its laſt ſtage.

Abſence of heat and thirſt in ſome caſes.

Convulſions, ſyncope, great depreſſion of ſpirits, exquiſite pain, ſo as to excite ſcreamings in the ſick. Delirium and a temporary loſs of memory after recovery.

A red or a brilliant eye, and a great venereal excitability in the convaleſcent ſtate of the diſeaſe.

Buboes, and an excluſive affection of the lymphatic glands.

Maculæ, or red ſpots reſembling flea bites, watery veſicles, or bliſters which end in mortifications, petechiæ, anthrax, and carbuncles.

Sizy,

Sizy, denſe, or diſſolved blood.

The plague appears in the forms of quotidian, tertian, and quartan fevers. It has different grades, alſo different durations, from one day to two, three and four weeks. It is moſt fatal at its firſt appearance. Convulſive twitchings of the tendons are leſs common in the plague, than in the nervous fever. It chaſes away, or unites with all other febrile diſeaſes.

I have before remarked, that during the prevalence of the plague, ſome foreigners eſcape the contagion.

The contagion of the plague infects the atmoſphere of a whole city, and is propagated without contact with the ſick. Many people diſcover marks of the preſence of this contagion in their bodies who are in apparent good health; a diſpoſition to ſweat is very common in ſuch perſons. The diſeaſe is ſometimes propagated by contact by means of this ſweat, when it affects the hands.

Perſons infected with the contagion of the plague, communicate it before they are ſenſible of their being affected by it. The contagion is excited at different times, from the moment it is

received

received into the body, until the 16th day afterwards.

Perſons who have had the plague, are capable of re-infection.

Brutes, as cats and dogs are affected in ſome inſtances, with ſymptoms of the plague, particularly buboes.

Perſons confined in Seraglios in Eaſtern countries, and in Monaſteries in Catholic countries, alſo grave-diggers, very often eſcape the plague.

The bodies of perſons who die of the plague become ſtiff in ſome inſtances immediately after death. Tears likewiſe often appear upon their cheeks.

Cold weather checks the plague, but not ſo uniformly as it does the yellow fever.

The diſeaſes which ſucceed the plague, appear with more or leſs of its ſymptoms.

It will appear hereafter that the cure of the yellow fever, accorded in ſeveral particulars, with that of the plague.

The

The circumſtances and ſymptoms in which the plague *differs* from the yellow fever are as follow:

A vomiting is leſs common in the plague, than in the yellow fever. Bile is leſs frequently diſcharged, and the ſtools are leſs fœtid, and offenſive.

There are ſmall horny ſwellings upon the breaſt and limbs in the plague which did not occur in the yellow fever. They are called *tokens*.

The contagion of the plague does not infect at ſo great a diſtance, as the contagion of the yellow fever.

It affects more univerſally, than the yellow fever, and (with a few exceptions) it is more mortal when left to itſelf.

It ſometimes prevails in cold weather. It prevails likewiſe in a greater variety of ſtates of the atmoſphere.

The body is of its uſual, or of a greeniſh colour after death.

The plague is of animal origin. It is derived in ſome inſtances from dead animal matters. The plagues

plagues which laid waſte the Roman Empire in the reign of Juſtinian, are aſcribed by Mr. Gibbon, to ſwarms of putrefying locuſts. But the moſt frequent ſource of the plague is from human miaſmata, rendered peſtilential, by famine, grief, the want of cleanlineſs, and by a number of perſons crowded together in ſmall rooms, or houſes.

The yellow fever has been confounded with the jail or hoſpital fever. I ſhall briefly enumerate the circumſtances and ſymptoms in which they agree and diſagree.

The *firſt* are as follow:

The jail-fever affects perſons who are debilitated by grief, fear, or intemperance.

The pulſe is ſometimes intermitting in this fever. This is taken notice of by Dr. Ferriar.

There are marks of congeſtion in the brain, without any ſigns of inflammation in it after death. There are likewiſe in this fever great depreſſion of ſpirits, ſighing, delirium, palſy, and a debilitated ſtate of the memory after recovery. This occurs more frequently, and in a greater degree after the jail, than after the yellow fever.

The

The eye is ſometimes red, and ſometimes dull in this fever. There is frequently an abſence of thirſt.

There is in the jail-fever in its worſt ſtate, a ſuppreſſion or great heat in the urine.

Buboes, petechiæ, pain along the ſpermatic cord, a ſwelling of one teſticle, ulcers in the throat, and abſceſſes in different parts of the body, have all occurred occaſionally in this fever.

The circumſtances and ſymptoms in which the jail fever *differs* from the yellow fever, are as follow:

It affects perſons who have been previouſly weakened by other diſeaſes, or who are of weakly habits.

The pulſe is ſeldom full or tenſe, but generally weak and quick.

The tongue ſoon loſes its whiteneſs and moiſture, and aſſumes when dry, a dark colour.

The ſtomach is ſeldom diſordered. The bowels are either in their natural ſtate, or a diarrhœa attends.

tends. The ſtools are ſeldom bilious, or preternaturally fœtid.

There are great twitchings in the tendons, and tremors in the tongue, and limbs.

Intermiſſions and remiſſions of the fever are ſeldom, or ſcarcely perceptible.

It prevails alike in the winter, ſpring, and autumn. It is moderated, or checked by warm weather, provided patients are placed in ſituations in which they can breathe a ſufficient quantity of freſh air.

It is leſs contagious and mortal than the yellow fever.

It is derived from human miaſmata produced under inferior degrees of all thoſe circumſtances, which favour the generation of the plague. It is, to the plague in its degree, what the common bilious, is, to the yellow fever.

There is a camp fever deſcribed by ſome authors, which is derived from a mixture of marſh and human miaſmata. Its ſymptoms are com-

pounded of thoſe which belong to the bilious, and jail fevers.

I ſhall not attempt to diſtinguiſh the yellow, from the common bilious fever. They are only different grades of the ſame diſeaſe. The following, appears to be the natural order of a ſcale of ſuch fevers as are derived from marſh miaſmata.

1. The yellow fever.

2. The common bilious remitting fever.

3. The common mild intermitting fever.

4. The febricula of authors, or what are called "inward fevers" in the ſouthern ſtates. Different degrees of *force* in the remote cauſe, in conjunction with a difference in the qualities of the atmoſphere, frequently produce all thoſe grades of bilious or marſh fever in different ſeaſons, and ſometimes, in the ſame ſeaſon. The encreaſe, or abſtraction of accidental ſtimuli, likewiſe often change theſe different ſtates of bilious fever into each other. Thus, what are called inward fevers have often been excited by means of a ride, or a long walk, into an intermittent; an intermittent has

has been changed by the premature uſe of the bark into a remitting fever, and a common remittent, has, by improper regimen or violent exerciſe, been excited into a yellow fever. The danger in each caſe, is determined by the force of the miaſmata, and the ſtate of the air.

In contemplating the immenſe proportion of human miſery, which is produced by peſtilential diſeaſes, we are naturally led to inquire, whether their approaches are not indicated by ſome unuſual ſigns in the operations of nature. What is called inſtinct in many animals, has repeatedly taught them to foreſee, and to avoid many natural evils; and if reaſon has not taught man to do the ſame, it is probably becauſe its exerciſes have not been directed to thoſe ſubjects.

I have endeavoured to diſcover whether any thing uncommon occurred in the operations of nature in the atmoſphere, or in the animal and vegetable kingdoms in the courſe of the winter and ſummer, which preceded our late epidemic. The reſult of my inquiries is as follows.

The winter of 1793 was unuſually moderate. It was ſuppoſed this had an influence upon the weather which favoured the generation and pro-

pagation of the diſeaſe. I ſhould have been diſpoſed to admit this opinion, had moderate winters in Pennſylvania been uniformly ſucceeded by ſickly autumns. Livy records that a peſtilential fever in Rome was preceded by an unuſually *cold* winter*.

The wild pigeons were common during the winter of 1793 in many parts of Pennſylvania. But they have occaſionally appeared in great flocks in our ſtate in former winters, without having been the harbingers of a ſickly autumn.

Dr. P. Ruſſel ſays, that uncommon and violent diſeaſes generally preceded the plague at Aleppo. Dr. Sydenham informs us, that acute inflammatory fevers were the forerunners of the plague in London in 1665. I ſuſpect that uncommon circumſtances attending certain diſeaſes, either as to their violence or time of appearance, will be found to ſuggeſt a prelude to a ſickly autumn in all countries. The ſcarlatina anginoſa I have remarked was attended with an uncommon degree of inflammatory diatheſis, in the month of July. Dr. Porter informed me that he had been called to ſeveral caſes of dyſentery, attended with ſymptoms of

* Riverius, vol. ii. p. 98.

great

great malignity, in the neighbourhood of Frankfort, in the months of July and Auguſt. Dr. Senter informed me in a letter dated the 26th of November, 1793, that "during the laſt two ſummer months, fevers and fluxes were more obſtinate than he had ever known them, at Newport in Rhode Iſland." My pupil Mr. Nathaniel Potter, in a letter from Caroline county, in Maryland, dated November 1ſt, 1793, gave me the following information. "On my arrival at this place, on the firſt of Auguſt, I was informed by gentlemen of the faculty, that the dyſentery had prevailed from the firſt of June to the fifteenth of July, with conſiderable mortality. From obſervations and communications from different people in this county, I did not heſitate to predict a ſickly autumn; for it is an invariable maxim here, both among phyſicians and farmers, that if the wheat be damaged by ruſt or blaſt, a contagious dyſentery is ſoon to follow; and the ſooner in the ſummer the dyſentery appears, the more violent and mortal will be the diſeaſes of the autumn."

Theſe communications, though ſhort and few, will be uſeful, if they ſerve to lead phyſicians to obſerve, and record hereafter the diſeaſes which precede univerſal and mortal epidemics.

There can be no doubt of a warm ſummer, whether it be wet or dry, having often preceded malignant autumnal fevers. Mr. Norris in a letter to one of his friends, dated the 24th of Auguſt, O. S. ſays that "the ſummer of 1699 was the hotteſt he had ever felt, and that ſeveral had died in the harveſt fields with the violence of the heat." It appears from another of Mr. Norris's letters, dated the 12th of Auguſt, O. S. that the yellow fever made its firſt appearance in that month. The yellow fevers of 1762 and 1793, were both preceded by warm ſummers.

I have one remark more to mention upon this ſubject, which was communicated to me by a gentleman who had reſided occaſionally in ſouthern and tropical countries. He informed me, that he had obſerved in the month of July, ſeveral weeks before the yellow fever became general, a peculiar and univerſal fallowneſs of complexion in the faces of the citizens of Philadelphia, ſuch as he had obſerved to precede the prevalence of malignant bilious fevers in hot climates. Dr. Dick informed me that he had obſerved the ſame appearance in the faces of people in Alexandria, accompanied in ſome caſes by a yellowneſs in the eyes, during the laſt ſummer, and ſome time before violent

lent bilious fevers became epidemic upon the banks of the Potowmac.

With theſe obſervations I take leave of the hiſtory of our late epidemic fever. A few of its ſymptoms which have been omitted in the hiſtory, will be included in the method of cure; for they were diſcovered or produced by the remedies which were uſed for that purpoſe.

☞ *The following Page begins an account of the ſtates of the thermometer and weather from the firſt of January to the firſt of Auguſt, and of the ſtates of the barometer, thermometer, winds, and weather, from the firſt of Auguſt to the ninth of November*, 1793. *The times of obſervation for the firſt three months are at* 7 *in the morning, and* 2 *in the afternoon; for the next five months they are at* 6 *in the morning, and* 3 *in the afternoon. From the firſt of October to the ninth of November, they are as in the firſt three months.*

January, 1793.

D.	Therm. 7h	Therm. 2h	Weather.
1	27	30	Cloudy.
2	30	41	Fair, cloudy.
3	30	33	Cloudy, rain.
4	38	41	Rain, cloudy.
5	35	42	Fair, cloudy.
6	33	47	Cloudy, fair.
7	33	51	Fair, fair.
8	32	49	Fair, ditto.
9	33	48	Hazey, fair.
10	38	51	Fair, ditto.
11	35	48	Fair, clouds.
12	31	42	Fair, ditto.
13	28	42	Fair, do.
14	25	27	Hail, ſnow, ſleet.
15	32	37	Clouds, miſts.
16	37	39	Rain, ditto.
17	37	45	Rain, ſnow, fair.
18	32	52	Fair, ditto.
19	37	48	Fair, do.
20	33	47	Hazey, cloudy.
21	36	47	Cloudy, fair.
22	27	32	Fair, ditto.
23	22	37	Fair, do.
24	30	39	Cloudy, do.
25	30	41	Fair, hazey.
26	31	—	Fair.
27	23	38	Fair, cloudy, ſnow.
28	35	45	Cloudy, fair.
29	29	37	Fair, ditto.
30	22	23	Snow, hail.
31	25	32	Cloudy, fair.

February, 1793.

Therm. 7h	Therm. 2h.	Weather.
9	26	Fair, hazey.
25	34	Rain, ditto.
33	37	Cloudy, fair.
25	46	Cloudy, fair.
36	44	Cloudy, ditto.
35	46	Cloudy, rain.
36	40	Cloudy, fair.
28	44	Cloudy, ditto.
42	50	Rain, fair.
38	40	Cloudy, fair.
19	27	Fair, cloudy.
20	28	Snow, cloudy.
22	31	Cloudy, ſnow.
27	39	Cloudy, fair.
18	40	Fair, ditto.
29	42	Cloudy, ditto.
44	48	Rain, ditto.
39	49	Cloudy, fair.
31	41	Cloudy, rain.
52	53	Rain, fair.
37	49	Fair, ditto.
29	34	Fair, do.
22	34	Snow, cloudy.
54	59	Rain, cloudy.
34	35	Cloudy, ditto.
35	43	Rain, miſt.
43	43	Rain, cloudy.
14	26	Fair, ditto.

March, 1793.

D.	Therm. 7h	Therm. 2h	Weather.
1	20	38	Fair, ditto.
2	31	51	Hazey, cloudy.
3	48	63	Rain, fair.
4	43	61	Hazey, ditto.
5	51	52	Rain, fair.
6	32	50	Fair, ditto.
7	36	62	Fair, do. clouds.
8	54	60	Cloudy, rain.
9	26	41	Fair, ditto.
10	29	51	Fair, do.
11	43	55	Rain, do.
12	40	43	Cloudy, do.
13	38	39	Cloudy, fair.
14	26	44	Fair, do.
15	32	59	Fair, do.
16	52	62	Cloudy, fair.
17	51	72	Cloudy, fair.
18	58	69	Hazey, cloudy.
19	53	59	Fair, do.
20	42	61	Fair, do.
21	41	43	Rain, cloudy.
22	31	47	Fair, do.
23	35	57	Fair, do.
24	37	50	Fair, do.
25	35	59	Fair, do.
26	47	54	Cloudy, rain.
27	43	51	Fair, cloudy.
28	33	45	Fair, clouds, fair.
29	34	57	Fair, do.
30	41	53	Cloudy, fair.
31	42	61	Cloudy, fair.

April, 1793.

Therm. 7h	Therm. 2h	Weather.
45	70	Cloudy, fair.
47	71	Fair, ditto.
56	80	Fair, do.
51	72	Cloudy, fair.
53	61	Cloudy, rain.
60	76	Misty, fair.
51	65	Fair, do.
46	74	Fair, do.
55	71	Fair, cloudy.
50	56	Fair, do.
37	63	Fair, do.
54	62	Cloudy, rain, fair.
49	62	Fair, do.
50	70	Fair, do.
45	55	Rain, cloudy.
46	62	Cloudy, fair.
48	67	Fair, clouds, fair.
52	66	Cloudy, fair.
52	75	Fair, do.
52	49	Rain, cloudy.
44	47	Cloudy, ditto.
43	46	Rain, cloudy.
42	63	Fair, do.
44	68	Fair, do.
45	65	Cloudy, cloudy.
53	57	Cloudy, rain.
47	46	Rain, do.
44	54	Rain, cloudy.
40	59	Fair, do.
40	65	Fair, do.

May, 1793.				*June*, 1793.			
D.	Therm. 7h	2h	Weather.	Therm. 7h	2h	Weather.
1	45	69	Foggy, cloudy.	59	61	Rain, ſhowery,
2	52	73	Fog, clouds, fair.	54	64	Clouds, ſhowers.
3	60	63	Rain, do.	55	62	Cloudy, rain, fair.
4	60	80	Fair, do.	54	60	Rain, do. cloudy.
5	55	56	Cloudy, do.	58	72	Cloudy, fair, rain.
6	47	58	Cloudy, fair.	—	71	Cloudy, rain.
7	50	68	Cloudy, fair.	68	78	Fair, do.
8	59	78	Cloudy, fair.	65	—	Fair, do.
9	61	79	Foggy, fair.	70	88	Fog, fair.
10	65	71	Rain, hazey.	74	90	Fair, do.
11	55	75	Cloudy, fair.	76	90	Fair, do.
12	61	76	Cloudy, rain.	75	88	Fair, ſhowers.
13	57	78	Fair, do.	74	81	Cloudy, rain.
14	59	83	Fair, cloudy.	63	77	Fair, do.
15	60	71	Fair, do.	63	82	Fair, hazey.
16	50	69	Fair, do.	67	85	Fair, do.
17	48	74	Fair, do.	74	89	Fair, ſhowers.
18	61	81	Cloudy, fair.	73	88	Fair, do.
19	65	85	Fair, rain.	77	91	Fair, do.
20	65	87	Fair, do.	79	88	Fair, rain, fair.
21	68	86	Fair do. clouds.	75	85	Cloudy, rain.
22	72	80	Clouds, guſts.	58	78	Cloudy, fair.
23	94	79	Cloudy, fair.	58	78	Fair, do.
24	58	75	Fair, do.	60	79	Fair, do.
25	52	70	Fair, cloudy.	67	74	Cloudy, rain.
26	61	66	Rain, do.	66	69	Cloudy, rain.
27	68	84	Cloudy, fair.	68	80	Cloudy, fair.
28	70	68	Fair, clouds, rain.	71	85	Cloudy, fair.
29	57	62	Cloudy, rain, clouds.	77	88	Cloudy, do.
30	54	57	Cloudy, rain.	74	90	Fair. do.
31	54	60	Clouds, do.			

JULY, 1793.

Days.	Barometer. 6 A. M.	Barometer. 3 P. M.	Therm. 6 A. M.	Therm. 3 P. M.	Winds. 6 A. M.	Winds. 3 P. M.	Weather.
1	30 0	29 9	77	88	W	W	fair,
2	29 8	29 7	77	81	W		fair, ſhowers,
3	29 9	30 0	74	80	E	E	cloudy,
4	30 1	30 0	70	83	E	SW	cloudy, fair, rain,
5	30 0	29 9	76	90	NW	SW	fair, do.
6	29 9	29 9	78	91	SW	SW	cloudy, thunder,
7	29 9	30 0	73	88	NE	NW	fair, clouds,
8	30 1	30 1	72	85	E	E	cloudy, fair,
9	30 0	29 8	73	81	S	SW	cloudy, do.
10	30 0	30 0	70	84	W	NW	fair, do.
11	30 0	30 0	74	88	NW	NW	fair, clouds,
12	30 1	30 2	70	84	N	N	fair, do.
13	30 1	30 0	68	83	NW	NW	fair, do.
14	30 0	30 0	65	80	N	Calm	fair, hazy,
15	30 0	29 9	66	75	SW	SW	cloudy, do.
16	29 8	29 7	70	83	W	W	rain, fair,
17	29 8	29 9	68	81	NW	NW	fair, do.
18	30 0	30 0	66	86	W	SW	fair, do.
19	29 9	29 9	75	85	SW	W	fair, cloudy, rain,
20	30 0	30 0	72	87	W	NW	fair, do. ſhower,
21	30 1	30 1	70	86	NW	NW	fair, do.
22	30 0	30 0	72	87	SW	SW	fair, do.
23	30 0	30 0	73	91	SW	SW	fair, cloudy,
24	29 9	29 9	75	89	Calm	W	cloudy, fair,
25	30 1	30 1	71	83	NW	NNW	fair, do.
26	30 2	30 2	63	82	N	NE	fair, do.
27	30 2	30 1	64	81	S calm	S	fair, cloudy,
28	30 1	30 0	72	85	Calm	NNE	cloudy, fair,
29	30 1	30 1	74	85	SSE	NE	cloudy, do. rain,
30	30 1	30 0	73	86	S	SW	cloudy, fair,
31	29 9	29 8	76	80	SSW	SW	cloudy, rain, fair.

AUGUST, 1793.

	Barometer.		Therm.		Winds.		Weather.	
	6 A. M.	3 P. M.	6 A. M.	3 P. M.	6 A. M.	3 P. M.	6 A. M.	3 P. M.
1	29 95	30 0	65	77	WNW	NW	cloudy,	fair,
2	30 1	30 1	63	81	NW	SW	fair,	fair,
3	30 6	29 95	62	82	N	NNE	fair,	fair,
4	29 97	30 0	65	87	S	SW	fair,	fair,
5	30 5	30 1	73	90	SSW	SW	fair,	fair,
6	30 2	30 0	77	87	SW	W	cloudy,	fair,
7	30 12	30 1	68	83	NW	W	fair,	fair,
8	30 1	29 95	69	86	SSE	SSE	fair,	rain,
9	29 8	29 75	75	85	SSW	SW	cloudy,	fair,
10	29 9	29 9	67	82	W	SW	fair,	fair,
11	30 0	30 0	70	84	SW	WSW	cloudy,	cloudy,
12	30 0	30 0	70	87	W	W	fair,	fair,
13	30 5	30 0	71	89	SW	W	fair,	fair,
14	30 0	30 95	75	82	SW	SW	fair,	rain,
15	30 0	29 1	72	75	NNE	NE	fair,	cloudy,
16	30 1	30 1	70	83	NNE	NE	fair,	fair,
17	30 1	30 0	71	86	SW	SW	fair,	fair,
18	30 1	30 1	73	89	Calm	SW	fair,	fair,
19	30 1	30 0	72	82	N	N	fair,	cloudy,
20	30 1	30 12	69	82	NNE	NNE	fair,	fair,
21	30 15	30 25	62	83	N	NNE	fair,	fair,
22	30 3	30 35	63	86	NE	SE	fair,	fair,
23	30 25	30 15	63	85	Calm	S	fair,	fair,
24	30 1	30 1	73	81	Calm	Calm	cloudy,	rain,
25	30 1	30 1	71	66	NE	NE	rain,	gr. rain
26	30 15	30 2	59	69	NE	NE	cloudy,	cloudy,
27	30 2	30 2	65	73	NE	NE	cloudy,	cloudy,
28	30 2	30 15	67	80	S	Calm	cloudy,	clearin.
29	30 16	30 15	62	86	Calm	SW	cloudy,	fair,
30	30 1	30 1	74	87	Calm	SW	fair,	fair,
31	30 0	30 0	74	84	SW	NW	rain,	fair.

SEPTEMBER,

SEPTEMBER, 1793.

	Barometer.		Therm.		Winds.		Weather.	
	6 A. M.	3 P. M.	6 A. M.	3 P. M.	6 A. M.	3 P. M.	6 A. M.	3 P. M.
1	30 0	29 30	71	86	Calm	SW	fog,	fair,
2	29 75	29 8	73	86	SW	SW	fair,	fair,
3	30 0		60		NW	N	fair,	fair,
4	30 15	30 15	55	75	W	W	fair,	fair,
5	30 15	30 1	62	80	SE	S	fair,	cloudy,
6	29 97	29 95	70	89	WSW	W	fair,	cloudy,
7	30 0	30 0	65	77	WNW	NW	fair,	fair,
8	30 1	30 1	64	7[illegible]	Calm	Calm	cloudy,	cloudy,
9	30 0	30 0	66	8[illegible]	SE	NW	rain,	fair,
10	30 0	30 0	64	72	N	NNE	fair,	cloudy,
11	30 1	30 0	62	72	NNE	N	cloudy,	fair,
12	29 96	29 9	58	76	NW	NNW	fair,	fair,
13	29 95	30 0	57	72	NW	N	fair,	fair,
14	30 0	30 5	58	79	NW	NW	fair,	fair,
15	30 0	29 97	65	80	N	S	fair,	fair,
16	29 9	29	70	84	S	SW	cloudy,	fair,
17	29 8	29 85	66	67	N	N	cloudy,	cloudy,
18	30 3		44		N		fair,	
19	30 4	30 35	45	70	Calm	SW	fair,	fair,
20	30 3	30 15	54	69	Calm	SE	hazy,	hazy,
21	30 0	29 0	59	78	Calm		cloudy,	fair,
22	30 0	30 0	63	83	Calm		cloudy,	fair,
23	30 1	30 1	62	81	Calm	SE	cloudy,	cloudy,
24	30 2	30 2	65	70	NE	ENE	cloudy,	fair,
25	30 15	30 0	61	68	NE	NE	cloudy,	cloudy,
26	29 8	29 7	58	79	N	N	cloudy,	fair,
27	29 7		64		NW	NW	cloudy,	fair,
28	30 5	30 15	54	73	NW	NW	fair,	fair,
29	30 3	30 3	56	74	NE	ENE	cloudy,	fair,
30	30 35	30 3	57	75	Calm	SW	foggy,	fair.

OCTOBER,

OCTOBER, 1793.

	Barometer.		Therm.		Winds.		Weather.	
	7 A. M.	2 P. M.	7 A. M.	2 P. M.	7 A. M.	2 P. M.	7 A. M.	2 P. M.
1	30 15	30 5	64	89	SW	SW	cloudy,	fair,
2	29 9	30 5	70	72	W	NNW	cloudy,	fair,
3	30 2	30 15	70	72	W	SW	fair,	fair,
4	29 75	29 7	59	72	SW	W	cloudy,	cloudy,
5	30 0	30 1	58	66	N	N	fair,	fair,
6	30 3	30 3	43	66	NE	W	fair,	fair,
7	30 45		46		calm		fair,	
8	30 6	30 6	53	68	N	N	fair,	fair,
9	30 5	30 4	52	70	NW	NW	fair,	fair,
10	30 2	30 2	49	74	E	NW	fair,	fair,
11	30 0	29 85	51	74	W	W	fair,	fair,
12	29 6	29 55	58	64	SW	NW	rain,	rain,
13	29 85	29 9	49	69	NW	NW	fair,	fair,
14	30 5	30 0	52	76	SW	SW	calm,	fair,
15	29 75	29 8	56	54	SW	N	fair,	rain,
16	30 0	30 0	37	53	NNW	N	fair,	fair,
17	30 1	30 1	37	60	NE	NE	fair,	fair,
18	30 1	30 1	41	62	NW	NW	fair,	fair,
19	30 0	29 9	51	66	N	N	cloudy,	fair,
20	30 0	30 0	44	54	NW	N	fair,	fair,
21	30 0	30 2	49	50	N	NW	fair,	fair,
22	29 6	29 5	51	65	NW	NW	fair,	fair,
23	29 8	29 8	47	60	W	W	fair,	fair,
24	30 3	30 4	36	59	W	NW	fair,	fair,
25	30 4	30 3	46	71	S	S	cloudy,	dash.
26	30 2	30 2	60	72	calm	SW	cloudy,	cloudy,
27	30 3	30 3	44	44	NNE	NNE	cloudy,	cloudy,
28	30 2	30 1	34	37	N	N	cloudy,	cloudy,
29	29 85	29 85	28	44	NNW	NW	fair,	fair,
30	30 1	30 1	28	49	calm	SW	hazy,	hazy,
31	30 15	30 2	42	45	calm	NNE	cloudy,	rain.

NOVEMBER,

NOVEMBER, 1793.

	Barometer.		Therm.		Winds.		Weather.	
	7 A. M.	2 P. M.	7 A. M.	2 P. M.	7 A. M.	2 P. M.	7 A. M.	2 P. M.
1	30 1	30 1	40	41	NNE	NE	rain,	cloudy,
2	30 3	30 25	32	49	NNE	NE	fair,	fair,
3	30 1	30 0	43	56	Calm	SW	cloudy,	cloudy,
4	29 8	29 9	55	67	SW	SW	cloudy,	fair,
5	30 15	30 1	50	64	NE	NE	rain,	rain,
6	29 8	29 65	63	67	S	S	cloudy,	cloudy,
7	29 8	29 8	44	64	Calm	SW	fair,	fair,
8	29 8	29 85	43	56	SSW	SW	fair,	fair,
9	29 9	29 95	42	64	SW	SW	fair,	fair.

Of the Method of Cure.

IN the introduction to the hiſtory of the fever, I mentioned the remedies which I uſed with ſucceſs, in ſeveral caſes which occurred in the beginning of Auguſt. I had ſeen, and recorded in my note book, the efficacy of gentle purges in the yellow fever of 1762; but finding them unſucceſsful after the 20th of Auguſt, and obſerving the diſeaſe to aſſume uncommon ſymptoms of great indirect debility, I laid them aſide, and had recourſe to a gentle vomit of ipecacuanha on the firſt day of the fever, and to the uſual remedies for exciting the action of the ſanguiferous ſyſtem. I gave bark in all its uſual forms of infuſion, powder, and tincture. I joined wine, brandy and aromatics with it. I applyed bliſters to the limbs, neck and head. Finding them all ineffectual, I attempted to rouſe the ſyſtem by wrapping the whole body, agreeably to Dr.

Hume's practice, in blankets dipped in warm vinegar. To these remedies I added one more; I rubbed the right side with mercurial ointment, with a view of exciting the action of the vessels in the whole system, through the medium of the liver, which I then supposed to be principally, tho' symptomatically, affected by the disease. None of these remedies appeared to be of any service; for although three out of thirteen recovered of those to whom they were applied, yet I have reason to believe that they would have recovered much sooner had the cure been trusted to nature. Perplexed and distressed by my want of success in the treatment of this fever, I waited upon Dr. Stevens, an eminent and respectable physician from St Croix, who happened then to be in our city, and asked for such advice and information upon the subject of the disease, as his extensive practice in the West Indies would naturally suggest. He politely informed me that he had long ago laid aside evacuations of all kinds in the yellow fever; that they had been found to be hurtful, and that the disease yielded more readily to bark, wine, and above all, to the use of the cold bath. He advised the bark to be given in large quantities by way of glyster, as well as in the usual way; and he informed me of the manner in which the cold bath should be used, so as to derive

rive the greateſt benefit from it. This mode of treating the yellow fever appeared to be reaſonable. I had uſed bark in the manner he recommended it in ſeveral caſes of the ſporadic yellow fever with ſucceſs in former years. I had moreover the authority of ſeveral other phyſicians of reputation in its favour. Dr. Cleghorn tells us, that "he ſometimes gave the bark when the bowels were full of vicious humours. Theſe humours (he ſays) are produced by the fault of the circulation. The bark by bracing the ſolids, enables them to throw off the excrementitious fluids, by the proper emunctories*."

I began the uſe of each of Dr. Stevens's remedies the next day after my interview with him, with great confidence of their ſucceſs. I preſcribed bark in large quantities; in one caſe I ordered it to be injected into the bowels every four hours. I directed buckets full of cold water to be thrown frequently upom my patients. The bark was offenſive to the ſtomach, or rejected by it in every caſe in which I preſcribed it. The cold bath was grateful, and produced relief in ſeveral caſes by inducing a moiſture on the ſkin. For a while I had hopes of benefit to my

* Page 223.

patients from the uſe of theſe remedies, but in a few days, I was diſtreſſed to find they were not more effectual than thoſe I had previouſly uſed. Three out of four of my patients died to whom the cold bath was adminiſtered in addition to the tonic remedies before mentioned.

Baffled in every attempt to ſtop the ravages of this fever, I anticipated all the numerous and complicated diſtreſſes in our city, which peſtilential diſeaſes have ſo often produced in other countries. The fever had a malignity, and an obſtinacy which I had never before obſerved in any diſeaſe, and it ſpread with a rapidity and mortality, far beyond what it did in the year 1762. Heaven alone bore witneſs to the anguiſh of my ſoul in this awful ſituation. But I did not abandon a hope that the diſeaſe might yet be cured. I had long believed, that good was commenſurate with evil, and that there does not exiſt a diſeaſe for which the goodneſs of Providence has not provided a remedy. Under the impreſſion of this belief, I applied myſelf with freſh ardour to the inveſtigation of the diſeaſe before me. I ranſacked my library, and pored over every book that treated of the yellow fever. The reſult of my reſearches for a while was fruitleſs. The accounts of the ſymptoms and cure of the diſeaſe by the authors

authors I conſulted, were contradictory, and none of them appeared altogether applicable to the prevailing epidemic. Before I deſiſted from the inquiry to which I had devoted myſelf, I recollected that I had among ſome old papers, a manuſcript account of the yellow fever as it prevailed in Virginia in the years 1741, which had been put into my hands by Dr. Franklin, a ſhort time before his death. I had read it formerly, and made extracts from it into my lectures upon that diſorder. I now read it a ſecond time. I pauſed upon every ſentence; even words in ſome places arreſted and fixed my attention. In reading the hiſtory of the method of cure, I was much ſtruck with the following paſſages.

"It muſt be remarked, that this evacuation (meaning by purges) is more neceſſary in this, than in moſt other fevers. The abdominal viſcera are the parts principally affected in this diſeaſe, but by this timely evacuation, their feculent corruptible contents are diſcharged, before they corrupt and produce any ill effects, and their various emunctories, and ſecerning veſſels are ſet open, ſo as to allow a free diſcharge of their contents, and conſequently a ſecurity to the parts themſelves, during the courſe of the diſeaſe. By this evacuation the very minera of the diſeaſe, pro-

ceeding from the putrid miaſma fermenting with the ſalivary, bilious, and other inquiline humours of the body, is ſometimes eradicated by timely emptying the abdominal viſcera on which it firſt fixes, after which a gentle ſweat does as it were nip it in its bud. Where the primæ viæ, but eſpecially the ſtomach, is loaded with an offenſive matter, or contracted, and convulſed with the irritation of its ſtimulus, there is no procuring a laudable ſweat, till that is removed; after which a neceſſary quantity of ſweat breaks *out of its own accord*, theſe parts promoting it when by an abſterging medicine, they are eaſed of the burden or ſtimulus which oppreſſes them."

"All theſe acute putrid fevers, ever require ſome evacuation to bring them to a perfect criſis, and ſolution, and that even by ſtools, which muſt be promoted by art, where nature does not do the buſineſs herſelf. On this account an *ill-timed ſcrupulouſneſs about the weakneſs of the body*, is of bad conſequence in theſe urging circumſtances; for it is that which ſeems chiefly to make evacuations neceſſary, which nature ever attempts, after the humours are fit to be expelled, but is not able to accompliſh for the moſt part in this diſeaſe; and I can affirm, that I have given a purge in this caſe, when *the pulſe has been ſo low, that it could hardly* be

be felt, and the *debility extreme*, yet *both one, and the other* have been *reſtored by it.*"

"This evacuation, muſt be procured by *lenitive chologoque* purges."

Here I pauſed. A new train of ideas ſuddenly broke in upon my mind. I believed the weak and low pulſe which I had obſeved in this fever, to be the eff ct of debility of the *indirect* kind, but the unſucceſsful iſſue of purging, and even of a ſpontaneous diarrhœa, in a patient of Dr. Hutchinſon's had led me not only to doubt of, but to dread its effects. My fears from this evacuation were confirmed, by the communications I had received from Dr. Stevens. I had been accuſtomed to raiſing a weak and low pulſe in pneumony and apoplexy, by means of blood-letting, but I had attended leſs to the effects of purging in producing this change in the pulſe. Dr. Mitchell in a moment diſſipated my ignorance and fears upon this ſubject. I adopted his theory, and practice, and reſolved to follow them. It remained now only to fix upon a ſuitable purge to anſwer the purpoſe of diſcharging the contents of the bowels. I have before deſcribed the ſtate of the bile in the gall-bladder, and duodenum in an extract from the hiſtory of a diſſection made by Dr.

Mitchell. I ſuſpected that my want of ſucceſs in diſcharging this bile, in ſeveral of the caſes in which I attempted the cure by purging, was owing to the feebleneſs of my purges. I had been in the habit of occaſionally purging with calomel in bilious and inflammatory fevers, and had recommended the practice the year before in my lectures, not only from my own experience, but upon the authority of Dr. Clarke. I had moreover, other precedents, for its uſe in the practice of Sir John Pringle, Dr. Cleghorn, and Dr. Balfour, in diſeaſes of the ſame claſs with the yellow fever. But theſe were not all my vouchers for the ſafety, and efficacy of calomel. In my attendance upon the military hoſpitals during the late war, I had ſeen it given combined with jalap in the bilious fever, by Dr. Thomas Young, a ſenior ſurgeon in the hoſpitals. His uſual doſe, was ten grains of each of them. This was given once or twice a day, until it procured large evacuations from the bowels. For a while I remonſtrated with the Doctor againſt this purge, as being diſproportioned to the violence and danger of the fever; but I was ſoon ſatisfied that it was as ſafe as cremor tartar, or glauber's ſalts. It was adopted by ſeveral of the ſurgeons of the hoſpital, and was univerſally known, and ſometimes preſcribed, by the ſimple name of *ten* and *ten*. This mode of giving

giving calomel occurred to me in preference to any other. The jalap appeared to be a neceſſary addition to it, in order to quicken its paſſage through the bowels; for calomel is ſlow in its operation, more eſpecially when it is given in large doſes. I reſolved after mature deliberation, to preſcribe this purge. Finding ten grains of jalap inſufficient to carry the calomel through the bowels, in the rapid manner I wiſhed, I added fifteen grains of the former, to ten of the latter; but even this doſe was ſlow, and uncertain in its operation. I then iſſued three doſes, each conſiſting of fifteen grains of jalap, and ten of calomel; one to be given every ſix hours until they procured four or five large evacuations. The effects of this powder, not only anſwered, but far exceeded my expectations. It perfectly cured four out of the firſt five patients to whom I gave it, notwithſtanding ſome of them were advanced ſeveral days in the diſorder. Mr. Richard Spain, a block-maker, in Third-ſtreet, took eighty grains of calomel, and rather more of rhubarb and jalap mixed with it, on the two laſt days of Auguſt, and on the firſt day of September. He had paſſed twelve hours, before I began to give him this medicine, without a pulſe, and with a cold ſweat on all his limbs. His relations had given him over, and one of his neighbours complained to me, of my neglecting

to

to adviſe them to make immediate preparations for his interment. But in this ſituation, I did not deſpair of his recovery. Dr. Mitchell's account of the effects of purging in raiſing the pulſe, exciting a hope that he might be ſaved provided his bowels could be opened. I now committed the exhibition of the purging medicine to Mr. Stall, one of my pupils, who mixed it, and gave it with his own hand three or four times a day. At length, it operated and produced two copious, fœtid ſtools. His pulſe roſe immediately afterwards, and a univerſal moiſture on his ſkin, ſucceeded the cold ſweat on his limbs. In a few days he was out of danger, and he now lives in good health as the firſt fruits of the efficacy of mercurial purges in the yellow fever.

After ſuch a pledge of the ſafety and ſucceſs of my new medicine, I gave it afterwards with confidence. I communicated the preſcription to ſuch of the practitioners as I met in the ſtreets. Some of them I found had been in the uſe of calomel for ſeveral days, but as they had given it in ſmall and ſingle doſes only, and had followed it by large doſes of bark, wine, and laudanum, they had done little or no good with it. I imparted the preſcription to the College of Phyſicians, on the third of September, and endeavoured to remove the

the fears of my fellow citizens, by aſſuring them that the diſeaſe was no longer incurable. Mr. Lewis, the lawyer, Dr. M'Ilvaine, Mrs. Bethel, her two ſons, and a ſervant maid, and Mr. Peter Baynton's whole family, (nine in number) were ſome of the firſt trophies of this new remedy. The credit it acquired, brought me an immenſe acceſſion of buſineſs. It ſtill continued to be almoſt uniformly effectual in all thoſe which I was able to attend, either in perſon, or by my pupils. Dr. Griffits, Dr. Say, Dr. Pennington, and my former pupils who had ſettled in the city, viz. Dr. Leib, Dr. Porter, Dr. Annan, Dr. Woodhouſe, and Dr. Meaſe, were among the firſt phyſicians who adopted it. I can never forget the tranſport with which Dr. Pennington ran acroſs the ſtreet, to inform me, a few days after he began to give ſtrong purges, that the diſeaſe, yielded to them in every caſe. But I did not rely upon purging alone, to cure the diſeaſe. The theory of its proximate cauſe, which I had adopted, led me to uſe other remedies, to abſtract exceſs of ſtimulus from the ſyſtem. Theſe were *blood-letting cool air*, *cold drinks*, *low diet*, and *applications of cold water* to the body. I had bled Mrs. Bradford, Mrs. Leaming, and one of Mrs. Palmer's ſons with ſucceſs, early in the month of Auguſt. But I had witneſſed the bad effects of bleeding in the firſt week

week in September, in two of my patients who had been bled without my knowledge, and who appeared to have died in conſequence of it. I had moreover, heard of a man who had been bled on the firſt day of the diſorder, who died in twelve hours afterwards. The caſes produced caution, but they did not deter me from bleeding as ſoon as I found the diſeaſe to change its type, and inſtead of tending to a criſis on the third, to protract itſelf to a later day. I began by drawing a ſmall quantity at a time. The appearance of the blood, and its effects upon the ſyſtem, ſatisfied me of its ſafety and efficacy. Never before did I experience ſuch ſublime joy as I now felt in contemplating the ſucceſs of my remedies. It repaid me for all the toils and ſtudies of my life. The conqueſt of this formidable diſeaſe, was not the effect of accident, nor of the application of a ſingle remedy; but, it was the triumph of a principle in medicine. The reader will not wonder at this joyful ſtate of my mind, when I add a ſhort extract from my note book, dated the 10th of September. "Thank God! Out of one hundred patients, whom I have viſited, or preſcribed for, this day, I have loſt none."

Being unable to comply with the numerous demands which were made upon me for the purging

ing powders, notwithſtanding I had requeſted my ſiſter, and two other perſons to aſſiſt my pupils in putting them up; and finding myſelf unable to attend all the perſons who ſent for me, I furniſhed the apothecaries with the recipe for the mercurial purges, together with a copy of the following directions, for giving them, and for the treatment of the diſorder.

"As ſoon as you are affected (whether by *night* or day) with a pain in the head or back, ſickneſs at ſtomach, chills or fever; more eſpecially, if thoſe ſymptoms be accompanied by a redneſs or faint yellowneſs in the eyes, take one of the powders in a little ſugar and water, every ſix hours, until they produce four or five *large* evacuations from the bowels—drink plentifully of water gruel, or barley water, or chicken water, or any other mild drink that is agreeable, to aſſiſt the operation of the phyſic. It will be proper to lie in bed while the medicine is operating; by which means a plentiful ſweat will be more eaſily brought on. After the bowels are *thoroughly* cleanſed, if the pulſe be *full* or *tenſe*, eight or ten ounces of blood ſhould be taken from the arm, and *more*, if the tenſion or fullneſs of the pulſe ſhould continue. Balm tea, toaſt and water, lemonade, tamarind water, weak camomile tea, or barley water ſhould be

be drank during this ſtate of the diſorder—and the bowels ſhould be kept conſtantly open, either by another powder, or by ſmall doſes of cremor tartar, or cooling ſalts, or by common opening glyſters; but if the pulſe ſhould become *weak* and *low* after the bowels are cleanſed, infuſions of camomile and ſnake-root in water, elixir of vitriol, and laudanum; alſo wine and water, or wine, punch, and porter ſhould be given, and the bark either in infuſion in water, or in ſubſtance, may be adminiſtered in the intermiſſion of the fever. Bliſters may likewiſe be applied to the ſides, neck, or head, in this ſtate of the diſorder, and the lower limbs may be wrapped up in flannels wetted in hot vinegar or water. The food ſhould conſiſt of gruel, ſago, panada, tapioca, tea, coffee, weak chocolate, wine whey, chicken broth, and the white meats, according to the weak or active ſtate of the ſyſtem. The fruits of the ſeaſon may be eaten with advantage at all times. Freſh air ſhould be admitted into the room in all caſes, and *cool* air when the pulſe is full and tenſe. The floor ſhould be ſprinkled now and then with vinegar, and the diſcharges from the body be removed as ſpeedily as poſſible."

"The beſt preventives of the diſorder, are a temperate diet, conſiſting chiefly of vegetables, great

great moderation in the exercises of body and mind, warm cloathing, cleanliness, and a gently open state of the bowels."

Hitherto there had been great harmony among the physicians of the city, although there was a a diversity of sentiment as to the nature and cure of the prevailing fever. But this diversity of sentiment and practice, was daily lessening, and would probably have ceased altogether in a few days, had not the following publication subscribed A. K. and said to be written by Dr. Adam Khun, made its appearnce on the 11th of September, in the General Advertiser, from which it was copied into all the papers of the city.

"SIR,

PHILADELPHIA, *Sept. 7th*, 1793.

"I RECEIVED your letter to day, and shall with pleasure give you every information in my power respecting the malignant fever, which proves so fatal among us. As I consider debility and putrefaction the alarming circumstances to be attended to, and to be obviated from the earliest commencement of the disease, my method of treatment is instituted accordingly, and has been generally successful. I do not administer any emetic, neither

neither do I give a laxative, unleſs indicated by coſtiveneſs, when I recommend cream of tartar or caſtor oil, but prefer a clyſter to either. In caſe of nauſea I order a few bowls of camomile tea to be taken; if the nauſea continues, it is to be relieved with the ſaline draught in a ſtate of effervescence, elixir of vitriol, and if neceſſary, laudanum. The ſickneſs of the ſtomach may alſo be alleviated by applying mint, cloves, or any other ſpice with wine or ſpirits to the pit of the ſtomach. The ſtomach being compoſed, 20 drops of elixir of vitriol are to be taken every two hours in a tea cup full of ſtrong cold camomile tea, and if bark can be retained, two drachms of the beſt pale bark in ſubſtance are to be given every two hours, alternately with the elixir of vitriol. When an ounce of bark has been adminiſtered in this manner, the doſe is to be diminiſhed to one drachm every two hours, as the continuance of the large doſes might diſorder the ſtomach or bowels. Should the bark prove purgative it will be neceſſary to give 10 or 15 drops of laudanum after every ſtool. But if the bark cannot be retained on the ſtomach, 20 drops of elixir of vitriol are to be taken every hour, and recourſe muſt be had to bark clyſters.

"Two ounces of bark are to be put into three half pints of boiling water, and boiled down to a

pint; the decoction to be ſtrained, and to 4 ounces of the decoction we add from two to four drachms of finely powdered bark and fifty drops of laudanum. This mixture is to be injected every four hours or oftner if the ſymptoms are violent. One or two glaſſes of Madeira wine may be added to each injection where the debility is great. Wine is to be given from the beginning; at firſt the weaker wines ſuch as claret and rheniſh; if theſe cannot be had, Liſbon or Madeira diluted with rich lemonade. The quantity is to be determined by the effects it produces and by the ſtate of debility which prevails, guarding againſt its occaſioning or encreaſing the heat, reſtleſſneſs and delirium. I prefer pale bark from a conviction that moſt of the red bark offered for ſale, is adulterated. But I place the greateſt dependence for the cure of the diſeaſe, on throwing cool water twice a day over the naked body. The patient is to be placed in a large empty tub, and two buckets full of water, of the temperature of about 75 or 80 degrees of Fahrenheit's thermometer, according to the ſtate of the atmoſphere, are to be thrown over him.

" He is then to be wiped dry and put to bed; it is commonly followed by an eaſy perſpiration and is always attended with great refreſhment to the

patient. This remedy however muſt be applied from the earlieſt attack of the diſeaſe and continued regularly through the whole courſe of it. Of regimen it is needleſs to ſay much to you: ripe fruits, ſago with wine, and rich wine-whey are the moſt proper. A ſpacious chamber with a free circulation of air, and repeatedly changing of bed and body linen are highly neceſſary. If the bark clyſters ſhould bring on coſtiveneſs the laudanum may occaſionally be omitted; if this is not attended with the deſired conſequences, we have recourſe to a common injection. Sprinkling the chamber with vinegar, waſhing the face, neck, hands and feet with it, and then wiping them dry, will have their uſe. The fumes of vinegar and of nitre will contribute much to ſweeten the air in the chamber.

I am, &c.

A. K.

" N. B. The practice of applying the cold bath in fevers is not new. In a malignant fever which prevailed at Breſlau in Sileſia and proved extremely fatal, yielded to none of the uſual remedies, Dr. De Haehn a phyſician of the place had recourſe to this remedy and found it effectual. It has alſo been uſed with advantage in England in putrid fevers.

In

In many of the Weſt India Iſlands it is generally employed in their malignant fevers. Dr. Stevens, a gentleman of high character in his profeſſion, who is now in this city, aſſures me that in the iſland of St Croix where he practiſed medicine many years, it has been found more effectual than any method heretofore practiſed.

"I am moreover indebted to Dr. Stevens for the following obſervations: that laxatives are never employed but when clyſters are not attended with the deſired effect of moving the bowels; that in violent attacks of the diſeaſe the bark clyſters are repeated every two hours, and the water is applied to the body every 6 or 8 hours and even more frequently; that when there is a diſpoſition to diarrhœa, the elixir of vitriol has a tendency to encreaſe it, and is therefore laid aſide, and that the diſeaſe wich he has ſeen in this country is of the ſame nature with the malignant fever of the Weſt Indies."

To obviate the effects of this letter upon the minds of the citizens, I publiſhed the next day an account of the ill ſucceſs which had attended the uſe of the remedies recommended by Dr. Kuhn, in my practice, and of the happy effects of mercurial purges and bleeding. This publication was concluded with the following remarks:

"The yellow fever now prevailing in our city, differs very materially from that which prevails in the Weſt Indies, and in ſeveral particulars from that of the year 1762. This will eaſily be believed, by all thoſe who attend to the influence of climate and ſeaſons, upon diſeaſes. Preſcribing for the *name* of a diſeaſe, without a due regard to the above circumſtances, has ſlain more than the ſword.

"My only deſign in withdrawing myſelf for a moment from the ſolemn duties to my fellow citizens, in which I am now engaged, is to bear a teſtimony againſt a method of treating the preſent diſorder, which if perſiſted in, would probably have aided it in deſolating three fourths of our city.

"I have had ſo many unequivocal proofs of the ſucceſs of the ſhort and ſimple mode which I have adopted, of treating this diſorder, that I am now ſatisfied, that under more favourable circumſtances of attendance upon the ſick, the diſeaſe would yield to the power of medicine with as much certainty as a common intermitting fever.

September 11, 1793. BENJ. RUSH."

The

The above addreſs to the citizens, produced the following letter from Dr. Kuhn to the Mayor of the city.

"SIR,

"IF you are of opinion that the encloſed ſtatement can have the leaſt tendency to abate the apprehenſions of the citizens, I beg of you to make any uſe of it you may think proper.

I am, with reſpect,

Your moſt humble ſervant,

September 13, 1793. A. KUHN.

Matthew Clarkſon, Eſq. Mayor of the city of Philadelphia.

"FROM the 23d of Auguſt, the day on which I ſaw the firſt patient in the yellow-fever, to the third of September, when I was myſelf confined with a remittent fever, I viſited ſixty perſons ill of various complaints. The greater part were indiſpoſed with remittent and intermittent fevers, which always prevail among us at this ſeaſon of the year, which all yielded readily to our mode of treating thoſe diſeaſes, except in one gentleman, who had been many years an invalid. Seven only of this number had the yellow fever;

of them were patients of other gentlemen of the Faculty. Of theſe ſeven, I was called to four, in the early ſtage of the diſeaſe. Three of them are now well; the other was in the fourth day of the diſeaſe, when I became unwell myſelf. He had then no unfavourable ſymptoms; but died on the eighth day from the time he was ſeized."

A day or two afterwards, the following letter appeared in all the newſpapers from Mr. Hamilton, the Secretary of the Treaſury of the United States, to the College of Phyſicians.

"GENTLEMEN,

"MOTIVES of humanity and friendſhip to the citizens of Philadelphia, induce me to addreſs to you this letter, in the hope that it may be in ſome degree inſtrumental in diminiſhing the preſent prevailing calamity. It is natural to be afflicted not only at the mortality which is ſaid to obtain, but at the conſequences of that undue panic which is faſt depopulating the city, and ſuſpending buſineſs both public and private.

I have myſelf been attacked with the reigning putrid fever, and with violence—but I truſt that I am now completely out of danger. This I

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am to attribute, under God, to the ſkill and care of my friend Doctor Stevens, a gentleman lately from the iſland of St. Croix, one to whoſe talents I can atteſt, from an intimate acquaintance begun in early youth, whoſe medical opportunities have been of the beſt, and who has had the advantage of much experience both in Europe (having been in Edinburgh ſome years ſince, when the ſame fever raged there) and in the Weſt Indies, where it is frequent. His mode of treating the diſorder varies eſſentially from that which has been generally practiſed—And I am perſuaded, where purſued, reduces it to one of little more than ordinary hazard.

I know him ſo well, that I entertain no doubt, that he will freely impart his ideas to you, collectively or individually; and being in my own perſon a witneſs to the efficacy of his plan, I venture to believe, that if adopted, and if the courage of the citizens can be rouſed, many lives will be ſaved, and much ill prevented. I may add, that as far as can be yet pronounced, its efficacy has been alike proved on Mrs. Hamilton, who is now in the diſorder, contracted from me, with every favourable appearance.

In giving you this information, Gentlemen, I have done what I thought diſcharging a duty. I only add, that if any conference with Dr. Stevens is deſired, that he is going to-morrow to New-York, from which journey he has been detained ſeveral days on my account.

I am, Gentlemen, with reſpect,

your obedient ſervant,

September 11.

A. HAMILTON.

" He lodges at Mrs. Williams's, corner of Spruce and Third ſtreets.

" *College of Phyſicians.*"

This letter was followed by a letter from Dr. Stevens to Dr. Redman, the preſident of the College of Phyſicians, which was publiſhed in the Federal Gazette of the 16th of September.

" SIR,

" IN compliance with the requeſt of the learned body over whom you preſide, I now cheerfully tranſmit them a few brief and detached obſervations on the nature and treatment of the preſent

preſent malignant and fatal diſorder which prevails in this city. Their humane anxiety to aſcertain the real character of the complaint, and to eſtabliſh ſome fixed and ſteady mode of cure for it, are freſh proofs of their benevolence, and clearly evinces that diſintereſted liberality for which they are ſo eminently diſtinguiſhed. I only regret that their application to me has approached ſo near the moment of my departure, that I have not ſufficient leiſure to elucidate the ſubject ſo amply and ſo ſatisfactorily as the importance of it deſerves. Imperfect, however, as the encloſed ſketch may be, I can with truth aſſure them, that it is the reſult of extenſive experience and accurate obſervation; and that it is dictated ſolely by a philanthropic deſire of checking the ravages of diſeaſe, and of reſtoring tranquility to the dejected minds of the public.

"This diſorder ariſes from contagion. Its approaches are ſlow and inſiduous at the commencement. It is uſhered in with a ſlight degree of languor and laſſitude, loſs of appetite, reſtleſſneſs and diſturbed dreams, depreſſion of ſpirits, and a want of inclination to perform the ordinary occupations of life. The patient does not conſider himſelf ſufficiently ſick to complain or call in the aſſiſtance of a phyſician. His feelings are rather unpleaſant than alarming,

alarming. This train of ſymptoms continue for two or three days, and if not removed by timely aid, is ſucceeded by a ſharp pain in the head, anxiety, and ſuppreſſion about the præcordia, a feeble pulſe, great proſtration of ſtrength, and a variety of other morbid phenomena, which are too well known to the faculty to need deſcription. In the firſt ſtage of the diſorder, a little attention, and the well directed efforts of a ſkilful practitioner, may generally prove ſucceſsful in mitigating the violence of future ſymptoms, and preventing either much danger or long confinement.

"At the firſt appearance of languor, laſſitude, &c. eſpecially if the patient has been near the ſource of contagion, he ſhould carefully avoid all fatigue of body and application of mind. Every thing that can tend to debilitate ſhould be carefully guarded againſt. He ſhould remain at perfect reſt. His diet ſhould be fuller and more cordial than uſual, and a few extraordinary glaſſes of old Madeira may be allowed. He ſhould take the cold bath every morning; and if his ſleep is diſturbed, a gentle opiate combined with a few grains of the volatile ſalts and ſome grateful aromatic may be adminiſtered at night. A few doſes of good genuine bark may be taken in powder during the day; and if the ſtomach ſhould

be

be alarmed with nauſea, a ſtrong decoction of the ſame may be ſubſtituted. Great care ſhould be taken to keep the mind of the patient calm and ſerene—neither to terrify it with needleſs apprehension, nor alarm it by the melancholy relation of the ſpreading mortality which ſurrounds him. It is at this ſtage of the complaint, that the phyſician may lay the foundation of ſure ſucceſs. But unfortunately, it is alſo the period of the diſeaſe which is commonly too much neglected by the patient. Gentlemen of the faculty are rarely called in until the ſymptoms are more alarming and dangerous. But it is a matter of material conſequence to the patient to know that by a little attention at the commencement, and by carefully watching the approaches of the diſeaſe even though it ſhould be contracted, it may be rendered mild, and may terminate favourably. It is alſo of equal conſequence for practitioners to attend to theſe particulars in laying down the prophylaxis to their patients.

" When the diſorder has gained ground and become violent and when the danger is imminent, the moſt unremitted exertions ſhould be made by the phyſician to mitigate the ſymptoms. The nauſea and vomitting may be relieved by an infuſion of camomile flowers, given frequently until the ſtomach

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is ſufficiently emptied of all crude matter. Small doſes of a cordial mixture compoſed of the oil of peppermint and compound ſpirits of lavender, may then be taken until the fever abates. If, notwithſtanding, the irritability of the ſtomach ſhould ſtill continue, recourſe muſt be inſtantly had to the cold bath, which muſt be uſed every two hours or oftener if the urgency of the ſymptoms ſhould require it. After each immerſion a glaſs of old Madeira, or a little brandy burnt with cinnamon, may be adminiſtered. Flannel clothes wrung out of ſpirits of wine, impregnated with ſpices, may be applied to the pit of the ſtomach, and changed frequently.

" An injection containing an ounce of powdered bark, mixed with thin ſalap or ſago, to which a teaſpoonful of laudanum has been added, ſhould be adminiſtered. Theſe injections may be continued every two or three hours, omitting the laudanum after the firſt. As ſoon as the ſtomach can bear the medicines and nouriſhment, the bark may be adminiſtered in ſmall doſes; as much Madeira wine may be given as the patient can bear without affecting his head, or heating him too much. All emetics and violent cathartics ſhould be avoided. If the bowels ſhould not be ſufficiently open, a laxative

tive clyſter may be neceſſary, or a few grains of powdered rhubarb added to each doſe of bark until the deſired effect is produced. If diarrhœa ſhould prevail, it muſt be checked by ſtarch injections blended with laudanum by the tinctura E. kino japonica, or a decoction of carcarilla. All draſtic cathartics do injury when the diſeaſe is in its advanced ſtage. If ſtupor, coma, or delirium ſhould come on, a large bliſter ſhould be applied between the ſhoulders, and ſmall ones to the thighs; ſtimulant cataplaſms ſhould alſo be applied to the ſoles of the feet: when hemorrhagies appear, the elixir of vitriol may be adminiſtered in conjunction with the bark, but great care ſhould be taken to prevent it from affecting the bowels.

"If the pulſe ſhould be much ſunk, the proſtration of ſtrength great, and ſubſultus tendinum take place, ſmall doſes of the liquor mineralis Hoffmanni, or even vitriolic æther diluted with water may be given. Muſk and camphor in this ſtage of the diſeaſe have likewiſe proved effectual. Upon the whole, ſir, I may ſum up this haſty outline, by inculcating the uſe of the tonic plan in its fulleſt extent, and by warning againſt the ill conſequences of debilitating applications, or profuſe evacuations in every period of the diſeaſe: the cold bath, bark and wine, a ſpacious well ventilated room, frequent

frequent change of bed and body linnen, and attention to reſt and quiet, if properly perſevered in, will in moſt caſes prove ſucceſsful, and ſtrip this formidable diſeaſe of its malignity, its terror, and its danger.

" The deſcription I have given of this diſorder, and the utility of the plan of cure I have laid down, are confirmed by experience and coincides with our reaſon and the ſoundeſt theory; the cauſe producing the effect is a ſtrong debilitating power; the ſymptoms occaſioned by its application, indicate extreme debility in the animal functions, and great derangement of the nervous ſyſtem; ought not therefore the remedies adapted to this complaint to be cordial, ſtimulating, and tonic? Should not violent evacuations, which evidently weaken and relax, be avoided? Theſe are hints which it would be preſumptuous and aſſuming in me to extend or dwell upon: to gentlemen of ſuch eminence as your colleagues, it is ſufficient to point out what reaſon and experience conjointly ſuggeſt to me. Their ſuperior judgment will, I am convinced, ſupply every deficiency, and enable them to purſue that plan which is beſt adapted to public utility, and the effectual removal of the preſent dreadful malady. If the few obſervations I have ſuggeſted be ſerviceable to the

the inhabitants of this city, my intentions will be fully anſwered, and my feelings completely gratified.

I have the honour to be, Sir,

Sept. 16*th*, 1793. } Your moſt obedient ſervant,

EDWARD STEVENS.

John Redman, M. D. preſident of the College of Phyſicians.

An eſſay upon the theory of this diſeaſe at this juncture, would have been as ill-timed as a diſcourſe upon tactics would be to an army in the height of a battle; but Dr. Stevens's publication made it neceſſary for me to appeal to the *reaſon* of my brethren upon the theory of the diſeaſe. I did it in a few words in the following addreſs to the College of Phyſicians.

"GENTLEMEN,

"IT is with extreme regret that I have read Dr. Steven's letter to the preſident of our College in one of the news-papers. It will, I fear,

I fear, co-operate with Dr. Kuhn's plan of treating the diſorder, and Mr. Hamilton's well-meant letter, in adding to the mortality of the diſorder. If I ſhould ſurvive my preſent labours, I hope to prove that Dr. Stevens's theory of the diſeaſe in the Weſt Indies, is as erroneous, as the practice he has recommended has been fatal, in Philadelphia. It is a moſt inflammatory diſorder in its firſt ſtage. The contagion, it is true, in its firſt action upon the ſyſtem, frequently produces debility; but the debility here is of the *indirect* kind, and ariſes wholly from an exceſs of the ſtimulus of contagion upon the ſyſtem. This indirect debility, as in many other diſeaſes, yields only to the abſtraction of other ſtimuli, and to none ſo ſpeedily as to large evacuations from the bowels and the blood-veſſels.

"I have ſo high an opinion of Dr. Stevens's candour and liberality as a gentleman and a phyſician, that I ſhall make no apology for thus publicly diſſenting from his opinions and practice.

"Could patients be viſited by phyſicians as often, and attended by nurſes as carefully, as in other acute diſeaſes, I am ſatisfied that the mode of treating it which I have adopted and recommended,

mended, would ſoon reduce it in point of danger and mortality, to a level with a common cold.

From, Gentlemen,

Sept. 17*th.* 1723, } Your ſincere friend and brother,

B. RUSH."

During this controverſy with the opinions and practice of Dr. Kuhn and Dr. Stevens, I publiſhed in the Federal Gazette, the following letter to the College of Phyſicians; alſo ſome additions to the directions I had publiſhed with the mercurial purges.

" GENTLEMEN,

" As the weekly meetings of our College have become no longer practicable, I have taken the liberty of communicating to you, the reſult of further obſervations upon the prevailing epidemic.

" I have found bleeding to be uſeful, not only in caſes where the pulſe was full and quick, but where it was *ſlow* and *tenſe*. I have bled in one caſe, where the pulſe beat only 48 ſtrokes in a minute, and recovered my patient by it. The pulſe became more full and more frequent after

it. This ſtate of the pulſe ſeems to ariſe from an inflamed ſtate of the brain, which ſhows itſelf in a preternatural dilatation of the pupils of the eyes. It is always unſafe to truſt to the moſt perfect remiſſions of fever and pain in this ſtate of the pulſe. It indicates the neceſſity of more bleeding and purging. I have found it to occur moſt frequently in children.

"I have bled twice in many, and in one acute caſe, four times, with the happieſt effects. I conſider intrepidity in the uſe of the lancet at preſent to be as neceſſary, as it is in the uſe of mercury and jalap, in this inſidious and ferocious diſeaſe.

"I lament the contrariety of opinion among the members of our College, upon the remedies proper in this diſeaſe. This contrariety ſeems to ariſe from the yellow fever being confounded with the jail or hoſpital fever. The fevers of Breſlau, Vienna, and Edinburgh, mentioned in ſome late publications, in which the cold bath was uſed with ſo much ſucceſs were of the latter kind. The two diſeaſes are totally different from each other in their cauſe, ſeaſons of prevailing, ſymptoms, danger, and method of cure.

From, Gentlemen,

"*Sept.* 12*th.* 1793. } Your friend and brother,

BENJ. RUSH."

FEDERAL GAZETTE.

" Dr. Ruſh regrets, that he is unable to comply with all the calls of his fellow citizens, who are indiſpoſed with the prevailing fever. He begs leave to recommend to ſuch of them as cannot have the benefit of medical aid, to take the mercurial purges, which may now be had with ſuitable directions at moſt of the apothecaries, and to loſe ten or twelve ounces of blood as ſoon as is convenient after taking the purges, if the head-ach and fever continue. Where the purges cannot be obtained, or do not operate ſpeedily, bleeding may *now* be uſed before they are taken. The almoſt univerſal ſucceſs with which it hath pleaſed God to bleſs the remedies of ſtrong mercurial purges and bleeding in this diſorder, enables Dr. Ruſh to aſſure his fellow citizens, that there is no more danger to be apprehended from it, when thoſe remedies are uſed in its early ſtage, than there is from the meaſles or influenza.

" Dr. Ruſh aſſures his fellow citizens further, that the riſk from viſiting and attending the ſick, in common caſes, at preſent, is not greater than from walking the ſtreets. He hopes this information will be attended to, as many of the ſick ſuffer greatly from the want of the aſſiſtance of bleeders, and of the attendance of nurſes and friends.

" While the diſeaſe was ſo generally mortal, or the ſucceſsful mode of treating it only partially adopted, Dr. Ruſh adviſed his friends to leave the city: at preſent he conceives this advice to be unneceſſary; not only becauſe the diſeaſe is now under the power of medicine, but becauſe the citizens who now wiſh to fly into the country, cannot avoid carrying the infection with them. They had better remain near to medical aid, and avoid exciting the infection into action, which is now in their bodies, by a ſtrict attention to former directions.

" Dr. R. does not believe it will be prudent for thoſe perſons who are in the country to return to town, until after *froſt* or *heavy rains* have taken place; both of which alike weaken or deſtroy the contagion of the yellow fever.

" *September* 12*th*, 1793.

Having mentioned the conditional uſe of bark, wine, and laudanum, in my firſt publication, and finding them not only uſeleſs, but hurtful, I publiſhed the following addreſs to the citizens of Philadelphia, on the 16th of September. In this addreſs I repeated my advice to live upon a milk and vegetable diet.

" Dr.

" Dr. Ruſh recommends to all ſuch of his fellow citizens as are expoſed to the contagion of the prevailing fever, to live upon a milk and vegetable diet, and take cooling purges once or twice a week. The effects of this regimen in rendering the diſeaſe mild (where it is taken) are nearly the ſame as in preparing the body for the ſmall-pox.

" Dr. R. adviſes thoſe perſons who cannot obtain the attendance of a phyſician, by no means to take vomits, bark, wine, or laudanum, during the firſt three or four days of the diſorder. As the diſeaſe is highly inflammatory at preſent in its firſt ſtages, the only proper remedies for it are, ſtrong purges, copious bleeding, if the pulſe be *full* or *tenſe*, or if it be *ſlower* than natural, and at the ſame time ſubject to pauſes in its pulſation.

" During this inflammatory ſtate of the diſeaſe, the drinks ſhould be ſimple and cold. No animal food ſhould be taſted; cool air ſhould be admitted into the room, and napkins dipped in pump water, ſhould be applied frequently to the forehead.

"Dr. R. recommends further, that the beds and clothes of perſons who have had the diſeaſe, ſhould *upon no account*, be expoſed to the heat of the ſun, but be waſhed in warm, or ſoaked in cold water.

"It would be an act of great humanity to the city, to provide all the phyſicians and bleeders, with horſes and chairs, as it will be impoſſible for them long to eſcape the diſeaſe, while they are ſo much pre-diſpoſed to it by conſtant fatigue."

September 16th, 1793.

I ſhall mention hereafter the ſubſtitutes I uſed for the tonic remedies with I had thus publicly decried.

On the 20th of September the following publication appeared in the Federal Gazette, ſubſcribed by Dr. Currie.

"Mr. Brown,

"It affords me particular ſatisfaction, that I now have it in my power to inform my fellow citizens, that the progreſs of the infectious fever, has greatly abated, and that with a little

little longer perſeverance in avoiding intercourſe with the infected, as far as humanity will permit, paying at the ſame time proper attention to fumigating and ventilating the houſes, clothing, and utenſils from whence the ſick have been removed, or where they have been confined, the infection which has proved ſo mortal, will moſt certainly, be entirely eradicated in a few days. The beſt method for affecting this, is contained in a late publication by the learned Dr Ruſſel.

"I have made the ſtricteſt enquiry reſpecting the number at preſent confined by the genuine yellow fever, and am convinced that it does not exceed 40 or 50 in the whole city.

"There is, however, another formidable diſeaſe prevalent, by which, I have reaſon to believe, there are above a thouſand ill at this time.

"The diſeaſe I mean, is the common remittent or fall fever. This fever, however, is not infectious.

"When the remitting fever attacks perſons not fully recovered from the effects of the influenza, (which is alſo ſtill prevalent here) it occaſions a violent determination of the blood to the head,

accompanied with acute pain, a redneſs of the eyes, with a faint tinge of yellow—the pulſe is quick and the ſkin hot. This is the diſeaſe which is ſo much under the power of blood-letting and purging; and is as different from the infectious, or genuine yellow fever, as the ſun is from the moon, or light from darkneſs.

"In the fall fever, which ſucceeds the influenza, the eye is ſprightly, though red, the face turgid and flushed:—Whereas, in the genuine yellow fever, the eye is dull and inanimate, and ſuffuſed with a duſky brown, the face pale, ſhrunk, and cadaverous, almoſt from the firſt attack. It is in the remitting fever, with the violent affection of the head, that the mode of treatment adviſed by Dr Ruſh, can only be proper; and not in the infectious or yellow fever. On the contrary, in the yellow fever it cannot fail of being certain death. In the yellow fever, the means recommended by Dr. Kuhn and Dr. Stevens, are the moſt effectual, and the only ones that can be relied on, with ſuch a variation as circumſtances, and the period of the diſeaſe may indicate.

"It is in the fall fever, circumſtanced as already deſcribed, that there is ſafety in viſiting and attending the ſick, becauſe this fever is not contagious.

gious. Can there be the ſame ſafety in viſiting patients confined with the genuine yellow fever, which made its appearance in Water-ſtreet, the third of Auguſt laſt? Let thoſe judge who have had opportunities of ſeeing its ravages! Is that fever, in which the bond of union is immediately diſſolved between the ſolids and fluids, and where the purple current iſſues from every pore, the ſame as that, for which Dr. Ruſh directs bleeding and purging? and can there be ſafety in viſiting perſons ſo affected? Have we all got the contagion of the yellow fever in our bodies, only waiting for ſome exciting cauſe to put it into action? By no means. The diſeaſe which Dr Ruſh calls the yellow fever, and of which Dr. P. ſays he has cured ſuch numbers by the *new method*, is only the fall fever, operating on perſons who have been previouſly affected by the influenza.

"It is time the veil ſhould be withdrawn from your eyes, my fellow citizens!

WM. CURRIE."

Sept. 17*th*, 1793.

To this I publiſhed the following anſwer the next day.

"Dr.

"Dr. Ruſh is extremely ſorry to differ from his friend Dr. Currie, in his opinion reſpecting the prevailing epidemic, publiſhed in the Federal Gazette of laſt evening. Dr. R. aſſerts from the authority of Dr. Sydenham, as well as from the obſervations of three and thirty years upon epidemic diſeaſes, that no two epidemics of *unequal* force can exiſt long together in the ſame place; and he is ſure, from what he has ſeen of the preſent diſeaſe, that all the fevers now in the city, are from *one* cauſe, and that they all require different portions of the ſame remedies. Dr. R. has no other motives for wiſhing to be believed by his fellow citizens in theſe aſſertions, than to beget a confidence in them, in remedies, which he conceives to be as rational, as he knows them to be ſucceſsful in the prevailing diſorder. If Dr. Currie will conſult Blane, Hume, Lining, and Hillary, upon the ſubject of the yellow fever, he will find that they all deſcribe it as making its firſt attack with the ſymptoms of a bilious remittent. Dr. R. perfectly recollects its appearing not only in this form, but in that of an intermittent, in the year 1762.

"Among many arguments which might be adduced to prove that all our preſent fevers ariſe from one ſource, and require the ſame treatment,

(varied

(varied according to their degrees of violence) Dr. R. will mention only one, and that is, he has cured many perſons by plentiful purging and bleeding, of the preſent epidemic, who have lived in families, in which perſons had died with a black vomiting, and a yellow ſkin.

"No one can ſuppoſe that Dr. R's. late indiſpoſition (after having been conſtantly expoſed for three weeks, to the contagion of the yellow fever in all its degrees of malignity) was not occaſioned by an attack of that diſorder, and yet he owes his perfect recovery through divine goodneſs, ſimply to two copious bleedings, and two doſes of the mercurial medicine, and that too, in the ſhort term of only *two* days.

September 18*th*, 1793.

Beſides the publications I have mentioned, Dr. Wiſtar addreſſed a hiſtory of an attack he had of the fever, to the phyſicians of Philadelphia, in the General Advertiſer of the 26th of September. He began it by obſerving, that "he believed many perſons had been ſuppoſed to have been cured of the diſeaſe, who had never had it," and he concluded without deciding upon any of the remedies which were the ſubjects of controverſy. He added a ſtrong teſtimony from his own

own experience of the efficacy of cool air in abating the exceſſive action of the arterial ſyſtem.

I paſs over many anonymous eſſays upon the fever, which appeared in the newſpapers; alſo ſeveral from medical gentlemen, who beheld the diſeaſe at a diſtance. They all tended more or leſs to diſtract the public mind, and to leſſen the confidence of the citizens in the ſimple and powerful remedies which I had recommended.

In ſupport of the efficacy of theſe remedies, Dr. Porter, Dr. Annan, and Dr. Meaſe, gave very decided teſtimonies in the public papers. I ſhall inſert, as an epitome of them all, the following letter from Dr. Porter.

"DEAR SIR,

"AS I know it will afford you much pleaſure, I ſend you the following ſtatement of caſes. Within three days paſt I have been called to thirty-ſeven perſons labouring under the prevailing epidemic. I have treated them all in the new method, with the greateſt ſucceſs; nearly half of them are ſo far recovered as to require no farther aſſiſtance from me. I cannot avoid mentioning one caſe of a man in whom the advantages of

of bleeding were remarkable.—The pain in his head was ſo violent as to lead me to order bleeding previous to purging—from ſome inaccuracy in the operation, he loſt a greater quantity than I directed, his attendants ſuppoſe ſixteen ounces; the conſequence however was, that at my next viſit I found that my patient had walked out perfectly recovered. This caſe was clearly marked with all the ſymptoms attendant on the diſeaſe in its firſt ſtages, particularly pain in the head and redneſs in the eyes.

With great regard,

I am your

Obedient ſervant,

September 17*th*.

JOHN PORTER."

"*Dr. Ruſh*."

The *ſafety* of the new remedies (as they were ſometimes called) was finally admitted by their greateſt enemies, but their *efficacy* was ſuppoſed to be confined only to common remittents, to the influenza, or to pleuriſies, and other inflammatory fevers; for thoſe diſeaſes were believed to be conſtantly preſent in the city; and the certificates which were publiſhed of large families having been cured of the yellow fever by the new remedies,

dies, were diſcredited, or treated with contempt, becauſe the patients had recovered without a *yellow colour* in their faces.

To refute this error, as well as to ſhow that I was not ſingular in my opinions reſpecting bloodletting, purges, and opium, I publiſhed the following extracts from Dr. Moſeley, in the Federal Gazette of the 11th of October.

"MR. BROWN,

"A NUMBER of the phyſicians of this city, who ſuppoſe that we have two fevers now prevailing among us, have aſſerted that a yellow colour is eſſential to what is called the yellow fever. The following extract from Dr. Moſely will ſhow how much they have been miſtaken. This judicious phyſician practiſed phyſic many years in Jamaica, and ſaw the fever which he deſcribes, in all its different forms.

"I have uſed (ſays the Doctor) the word *yellow* in compliance with cuſtom; but I even diſtruſt that name, as the *inexperienced* may be looking out for that appearance, and not find, until it is *too late*, the diſeaſe he has to contend with. And indeed, the yellowneſs of the ſkin, like the black vomiting,

vomiting, is not an invariable ſymptom of this fever. Thoſe who are *fortunate enough* to recover, ſeldom have it; and many die without its appearance. Beſides, the yellowneſs alone, leads to nothing certain; it may ariſe from an inoffenſive ſuffuſion of bile." P. 411—ſecond edition.

"The preſent epidemic has likewiſe been called a putrid fever, and the remedies for the cure of that ſpecies of fever have been very generally preſcribed. The following extract from the ſame author will ſhow the error and miſchief of that opinion and practice:"

"This diſeaſe is in the higheſt degree poſſible, an inflammatory one, accompanied with ſuch ſymptoms, in a greater extent as attend all inflammatory fevers, and moſt ſtrikingly the reverſe of any diſeaſe that is putrid, or of one *continued exacerbation.* It attacks all ſuch people and under ſuch circumſtances as are ſeldom the objects of putrid diſeaſes." P. 412.

"In another place he ſays, "Bleeding muſt be performed, and repeated every ſix or eight hours, or whenever the exacerbations come on, while the heat, fulneſs of pulſe, and pains continue;

tinue; and if theſe ſymptoms be violent and obſtinate, and do not abate during the firſt 36 or 48 hours of the fever, bleeding ſhould be executed even to fainting. Taking away only ſix or eight ounces of blood becauſe the patient may be faint, which is a ſymptom of the diſeaſe, is doing nothing towards the cure. Where bleeding is improper, no blood ſhould be taken away; where it is proper, that quantity will not relieve, and it is loſing that time which can never be regained.' P. 427—428.

" On PURGES, the Doctor makes the following remarks.

" When a ſufficient quantity of blood has been taken away, (which is *never* done) let the patient's habit be what it may, while the heat, reiterated exacerbations, fluſhings in the face, thirſt, pains in the head, and burning in the eyes remain, the next ſtep is to evacuate the contents of the bowels, and turn the humours downwards." P. 435.

" Speaking of opium, the Doctor ſays, " In a fever ſo highly inflammatory, where the contents of the whole alimentary canal are ſo hot and acrid, opium muſt be a fatal medicine." P. 459.

"To theſe quotations I ſhall only add, that the diſeaſe, from the influence of the cool weather is probably more univerſally, and more highly inflammatory, in our city, and requires more copious evacuations than in the iſland of Jamaica. It certainly requires more ſpeedy and more plentiful bleeding than a common pleuriſy, inaſmuch as the blood-veſſels, rendered weak by the previous hot ſummer, are in more danger of being ruptured both externally and internally, from the violent ſtimulus of the contagion, than in an inflammatory fever, which ſucceeds cold weather.

BENJ. RUSH."

October 9th, 1793.

In juſtice to Dr Currie, I take great pleaſure in inſerting the following ſhort addreſs to the citizens, in which he retracts the opinion he had given to the public in the Federal Gazette of the 20th of September.

"*October* 2d, 1793.

"ALL the phyſicians engaged in practice at preſent in the city, agree with Dr. Ruſh that blood-letting and copious purging are requiſite in the cure of the prevailing epidemic, in every caſe where inflammatory ſymptoms are evident,

and that the diſpute hitherto has been about the name of the diſeaſe, rather than the proper mode of treatment.

W. CURRIE.

The concluſion of the above addreſs was unfortunately erroneous. The diſpute between the phyſicians turned upon more intereſting points than the name of the diſeaſe, as muſt be very obvious from the peruſal of the preceding pages.

I cannot diſmiſs the publications which held up the exiſtence of other febrile diſeaſes, beſides the yellow fever, in our city, without remarking that it requires an uncommon portion of charity to aſcribe them to juſt or benevolent motives. Had the contrary opinion been erroneous, it would have been kind not to have oppoſed it. The miſtake would have been innocent; but the reverſe of this opinion was the melancholy cauſe, as will appear hereafter, of the principal part of the mortality of the diſorder.

I have ſuppreſſed a letter to Dr John Rodgers of New York, dated the third of October, containing a ſhort hiſtory of the treatment of the diſeaſe, only becauſe it will be detailed more fully in this

this work. That publication was intended as an anſwer to many letters which I received from practitioners in the country, requeſting an account of my mode of treating the diſorder. I have likewiſe ſuppreſſed a ſecond letter to Dr. Rodgers, containing ſome extracts from Dr. Sydenham, which were intended to eſtabliſh the excluſive influence of powerful epidemics over inferior febrile diſeaſes. This ſubject has been diſcuſſed in a more ample manner in the hiſtory or the fever.

From the different publications which I have inſerted, it appears that there were two modes of practice purſued; the one dictated by an opinion that the diſeaſe was highly putrid, and the other, that it was of a highly inflammatory nature. But beſides theſe there were two other modes of treating the diſeaſe, the one by *moderate* purging with calomel only, and moderate bleeding, on the firſt or ſecond day of the fever, and afterwards by the copious uſe of bark, wine, laudanum, and aromatic tonics. This practice was ſupported by an opinion, that the fever was inflammatory in its firſt, and putrid in its ſecond ſtage; the other mode referred to, was peculiar to the French phyſicians, ſeveral of whom had arrived in the city from the Weſt Indies juſt before the diſorder made its appearance. Their remedies were various. Some of them preſcribed nitre, cremor tartar, camphor, centaury tea,

the warm bath, glyſters, and moderate bleeding, while a few, uſed lenient purges, and large quantities of tamarind water, and other diluting drinks. The diſſentions of the American phyſicians threw a great number of patients into the hands of theſe French phyſicians. They were moreover ſuppoſed to be better acquainted with the diſeaſe than the phyſicians of the city, moſt of whom it was well known had never ſeen it before.

I ſhall hereafter inquire into the relative ſucceſs of each of the four modes of practice which have been mentioned.

Having delivered a general account of the remedies which I uſed in this diſorder, I ſhall now proceed to make a few remarks upon each of them. I ſhall afterwards mention the effects of the remedies uſed by other phyſicians.

OF PURGING.

I HAVE already mentioned my reaſons for promoting this evacuation, and the medicine I preferred for that purpoſe. It had many advantages over any other purge. It was detergent to the bile and mucus which lined the bowels.

bowels. It probably acted in a peculiar manner upon the biliary ducts, and it was rapid in its operation. One dose was sometimes sufficient to open the bowels; but from two to six doses were often necessary for that purpose; more especially as part of them was frequently rejected by the stomach. I did not observe any inconvenience from the vomiting which was excited by the jalap. It was always without the straining which is produced by emetics; and it served to discharge bile when it was lodged in the stomach. I did not rest the discharge of the contents of the bowels on the issue of one cleansing on the first day. There is in all bilious fevers, a reproduction of morbid bile as fast as it is discharged. I therefore gave a purge every day while the fever continued. I used castor oil, salts, cremor tartar, and rhubarb (after the mercurial purges had performed their office) according to the inclinations of my patients, in all those cases where the bowels were easily moved; but where this was not the case, I gave a single dose of calomel and jalap every day. Strong as this purge may be supposed to be, it was often ineffectual; more especially after the 20th of September, when the bowels became more obstinately costive. To supply the place of the jalap, I now added gamboge to the calomel. Two grains and an half of each made into a pill, were given to an adult every six hours until they

procured four or five ſtools. I had other deſigns in giving a purge every day beſides diſcharging the re-accumulated bile. I had obſerved the fever to fall with its principal force upon ſuch parts of the body as had been previouſly weakened by any former diſeaſe. By creating an artificial weak part in the bowels, I diverted the force of the fever to them, and thereby ſaved the liver and brain from fatal or dangerous congeſtions. The practice was further juſtified by the beneficial effects of a plentiful ſpontaneous diarrhœa in the beginning of the diſorder*; by hemorrhagies from the bowels, when they occurred from no other parts of the body, and by the difficulty or impracticability of reducing the ſyſtem by means of plentiful ſweats. The purges ſeldom anſwered the intentions for which they were given, unleſs they produced four or five ſtools a day. As the fever ſhewed no regard to day or night in the hours of its exacerbations, it became neceſſary to obſerve the ſame diſregard to time in

* In ſome ſhort manuſcript notes on Dr. Mitchell's account of the yellow fever in Virginia, in the year 1741, made by the late Dr. Kearſly, Sen. of this city, he remarks, that in the yellow fever which prevailed in the ſame year in Philadelphia "ſome recovered by an *early* diſcharge of *black* matter by ſtool." This gentleman, Dr. Redman informed me, introduced purging with Glauber ſalts in the yellow fever in our city. He was preceptor to Dr. Redman in medicine.

every

the exhibition of purges; I therefore preſcribed them in the evening at all times when the patient had paſſed a day without two or three plentiful ſtools. When purges were rejected, or ſlow in their operation, I always directed opening glyſters to be given every two hours. The effects of purging were as follow:

1. It raiſed the puſe when low, and reduced it when it was preternaturally tenſe or full.

2. It revived and ſtrengthened the patient. This was evident in many caſes, in the facility with which patients who had ſtaggered to a cloſe-ſtool, walked back again to their beds, after a copious evacuation. Dr. Sydenham takes notice of a ſimilar encreaſe of ſtrength after a plentiful ſweat in the plague. They both acted by abſtracting exceſs of ſtimulus, and thereby removing indirect debility.

3. It abated the paroxiſm of the fever. Hence aroſe the advantage of giving a purge in ſome caſes in the evening, when an attack of the fever was expected in the courſe of the night.

4. It frequently produced copious and univerſal ſweats when given on the firſt or ſecond day of the

fever, after the moſt powerful ſudorifics had been taken to no purpoſe.

5. It ſometimes checked that vomiting which occurs in the beginning of the diſorder; and it always aſſiſted in preventing the more alarming occurrence of that ſymptom, about the 4th or 5th day.

6. It removed obſtructions in the lymphatic ſyſtem. I aſcribe it wholly to the action of mercury, that in no inſtance did any of the glandular ſwellings, which I formerly mentioned, terminate in a ſuppuration.

7. By diſcharging the bile through the bowels as ſoon and as faſt as it was ſecreted, it prevented in moſt caſes a yellowneſs of the ſkin.

However ſalutary the mercurial purge was, objections were made to it by many of our phyſicians; and prejudices, equally weak and ill-founded, were excited againſt it. I ſhall enumerate and anſwer thoſe objections.

1. It was ſaid to be of too draſtic a nature. It was compared to arſenic; and it was called a doſe for a horſe. This objection was without foundation.

tion. Hundreds who took it declared they had never taken ſo mild a purge. I met with but one caſe in which it produced bloody ſtools; but I ſaw the ſame effect from a doſe of ſalts. It ſometimes, it is true, operated from twenty to thirty times in the courſe of twenty-four hours; but I heard of an equal number of ſtools in two caſes from ſalts and cremor tartar. It is not an eaſy thing to affect life, or even ſubſequent health, by copious or frequent purging. Dr. Kirkland mentions a remarkable caſe of a gentleman who was cured of a rheumatiſm by a purge, which gave him between 40 and 50 ſtools. This patient had been previouſly affected by his diſorder 16 or 18 weeks*. Dr Moſely not only proves the ſafety, but eſtabliſhes the efficacy of numerous and copious ſtools in the yellow fever. Dr. Say probably owes his life to three and twenty ſtools procured by a doſe of calomel and gamboge, taken by my advice. Dr Redman was purged until he fainted, by a doſe of the ſame medicine. This venerable gentleman, in whom 71 years had not abated the ardour of humanity, nor produced obſtinacy of opinion, came forward from his retirement, and boldly adopted the remedies of purging and bleeding, with ſucceſs, in ſeveral families, before he was attacked by the diſeaſe. His reco-

* Treatiſe on the Inflammatory Rheumatiſm, vol. i. p. 407.

very

very was as rapid, as the medicine he had uſed was active in its operation. Beſides taking the above purge, he loſt twenty ounces of blood by two bleedings in two days*.

But who can ſuppoſe that a dozen or twenty ſtools in a day could endanger life, that has ſeen a diarrhœa continue for ſeveral months, attended with fifteen or twenty ſtools every day, without making even a material breach in the conſtitution? Hence Dr. Hillary has juſtly remarked, that "it

* Dr. Redman was not the only inſtance furniſhed by the diſorder, in which *reaſon* got the better of the habits of old age, and of the formalities of medicine. About the time the fever declined, I received a letter from Dr. Shippen, Sen. (then above 82 years of age) dated Oxford Furnace, New Jerſey, October 13th, 1793, in which, after approving in polite terms of my mode of practice, he adds "Deſperate diſeaſes require deſperate remedies. I would only propoſe ſome ſmall addition to your preſent method. Suppoſe you ſhould ſubſtitute, in the room of the jalap, *ſix* grains of gamboge, to be mixed with 10 or 15 grains of calomel; and after a doſe or two as occaſion may require, you ſhould bleed your patients *almoſt* to death, at leaſt to *fainting*; and then direct a plentiful ſupply of mallows tea, with freſh lemon juice, and ſugar and barley water, together with the moſt ſimple, *mild*, and nutritious food." The Doctor concludes his letter by recommending to my peruſal Dr. Dover's account of nearly a whole ſhip's crew having been cured of a yellow fever, on the coaſt of South America, by being bled until they fainted.

rarely

rarely or never happens that the purging in this diſeaſe, though violent, takes the patient off, but the fever and inflammation of the bowels*. Dr. Clark in like manner remarks, that evacuations do not deſtroy life in the dyſentery, but the fever with the emaciation or mortification which attend and follow the diſeaſe†.

2. A ſecond objection to this mercurial purge was, that it excited a ſalivation, and ſometimes looſened the teeth. I met with but two caſes in which there was a loſs of teeth from the uſe of this medicine, and in both, the teeth were previouſly looſe or decayed. The ſalivation was a trifling evil, compared with the benefit which was derived from it. I loſt only one patient in whom it occurred. I was taught by this accidental effect of mercury, to adminiſter it with other views, than merely to cleanſe the bowels, and with a ſucceſs which added much to my confidence in the power of medicine over this diſeaſe. I ſhall mention thoſe views under another head.

3. It was ſaid that the mercurial purge excoriated the rectum, and produced the ſymptoms of pain and inflammation in that part, which were formerly mentioned.

* Diſeaſes of Barbadoes, p. 212.

† Diſeaſes in Voyages to Hot Climates, vol. ii. p. 322.

To

To refute this charge, it will be ſufficient to remark, that the bile produces the ſame excoriation and pain in the rectum in the bilious and yellow fever, where no mercury has been given to diſcharge it. In the bilious remitting fever which prevailed in Philadelphia in 1780, we find the bile which was diſcharged by "gentle doſes of ſalts, and cream of tartar, or the butter nut pill, was ſo acrid as to excoriate the rectum, and ſo offenſive as to occaſion in ſome caſes ſickneſs and faintneſs, both in the patients, and in their attendants*."

Dr Hume ſays further upon this ſubject, that the rectum was ſo much excoriated by the natural diſcharge of bile in the yellow fever, as to render it impoſſible to introduce a glyſter pipe into it.

4. It was objected to this purge, that it inflamed and lacerated the ſtomach and bowels. In ſupport of this calumny, the inflamed and mortified appearances which thoſe viſcera exhibited upon diſſection in a patient who died at the hoſpital at Buſh-hill, were ſpoken of with horror in ſome parts of the city. To refute this objection, it will only be neceſſary to review the account formerly given of the ſtate of the ſtomach and bowels after death from the yellow fever, in

* Medical Inquiries and Obſervations, London Edition, vol. i. p. 112.

caſes

caſes in which no mercury had been given. I have before taken notice that Sir John Pringle, and Dr Cleghorn, had preſcribed mercurial purges with ſucceſs in the dyſentery, a diſeaſe in which the bowels are affected with more irritation and inflammation than in the yellow fever. Dr. Clark informs us that he had adopted this practice. I ſhall inſert the eulogium of this excellent phyſician, upon the uſe of mercury in the dyſentery in his own words. "For ſeveral years paſt, when the dyſentery has reſiſted the common mode of practice, I have adminiſtered mercury with the greateſt ſucceſs; and am thoroughly perſuaded that it is poſſeſſed of powers to *remove inflammation*, and *ulceration* of the inteſtines, which are the chief cauſes of death in this diſtemper*."

5. It was urged againſt this powerful and efficacious medicine, that it was preſcribed indiſcriminately in all caſes; and that it did harm in all weak habits. To this I anſwer, that there was no perſon ſo weak by conſtitution, or a previous diſeaſe, as to be injured by a ſingle doſe of this medicine. Mrs. Meredith the wife of the Treaſurer of the United States, a lady of uncommon delicacy of conſtitution, took two doſes of the powder in the courſe of twelve hours, not only without any inconvenience, but with an evident

* Vol. ii. p. 342.

increaſe

increaſe of ſtrength ſoon afterwards. Many ſimilar caſes might be mentioned. Even children took two or three doſes of it with perfect ſafety. This will not ſurpriſe thoſe phyſicians who have been in the practice of giving from ten to twenty grains of mercury, with an equal quantity of jalap, as a worm purge, and from fifty to an hundred grains of calomel in the courſe of four or five days, in the internal dropſy of the brain. But I am happy in being able to add further, that many women took it in every ſtage of pregnancy without ſuffering the leaſt inconvenience from it. Out of a great number of pregnant women whom I attended in this fever, I did not loſe one to whom I gave this medicine, nor did any of them ſuffer an abortion. One of them had twice miſcarried in the courſe of the two or three laſt years of her life. She bore a healthy child three months after her recovery from the yellow fever.

No one has ever objected to the *indiſcriminate* mode of preparing the body for the ſmall-pox by purging medicines. The *uniform* inflammatory diatheſis of that diſeaſe, juſtifies the practice in a certain degree in all habits. The yellow fever admits of a ſameneſs of cure much more than the ſmall-pox, for it is *more* uniformly and more highly inflammatory. An obſervation of Dr. Sydenham, upon epidemics applies in its utmoſt extent to our late

late fever. "Now it muſt be obſerved (ſays this moſt acute Phyſician) that ſome epidemic diſeaſes, in ſome years are uniformly and conſtantly the ſame*." However diverſified our fever was in ſome of its ſymptoms, it was in all caſes accompanied by more or leſs inflammatory diatheſis, and by a morbid ſtate of the alimentary canal.

Much has been ſaid of the bad effects of this purge from its having been put up careleſsly by the apothecaries, or from its having been taken contrary to the printed directions, by many people. If it did harm in any one caſe (which I do not believe) from the former of the above cauſes, the fault is not mine. Twenty men employed conſtantly in putting up this medicine, would not have been ſufficient to have complied with all the demands which were made on me for it. Hundreds who were in health, called or ſent for it as well as the ſick, in order to have it in readineſs in caſe they ſhould be ſurpriſed by the diſorder in the night, or at a diſtance from a phyſician.

In all the caſes, in which this purge was ſuppoſed to have been hurtful, when given on the firſt or ſecond day of the diſorder, I believe it was becauſe it was not followed by repeated doſes of the ſame, or of ſome other purge; or becauſe it

* Vol. i. p. 9.

was

was not aided by blood-letting. I am led to make this aſſertion, not only from the authority of Dr. Sydenham, who often mentions the good effects of bleeding in moderating or checking a diarrhœa, but by having heard no complaints of patients being purged to death by this medicine, after blood-letting was univerſally adopted by all the phyſicians in the city.

It was remarkable that the demand for this purging powder continued to encreaſe under all oppoſition, and that the ſale of it by the apothecaries was greateſt towards the cloſe of the diſeaſe. I ſhall hereafter ſay, that this was not the caſe with the Weſt India remedies.

It is poſſible that this purge ſometimes proved hurtful when it was given after the 5th day of the diſorder, but it was ſeldom given for the *firſt* time after the third day, and when it was, the patient was generally in ſuch a ſituation that nothing did him either good or harm.

I derived great pleaſure from hearing after the fever had left the city, that calomel had been given with ſucceſs as a purge in bilious fevers in other parts of the Union beſides Philadelphia. Dr. Lawrence informed me that he had cured many patients by it, of the yellow fever which prevailed

in New York in the year 1791, and the New York papers have told us that ſeveral practitioners had been in the habit of giving it in the autumnal fevers, with great ſucceſs in the Weſtern parts of that ſtate. They had probably learned the uſe of it from Dr. Young, who formerly practiſed in that part of the United States, and who loſt no opportunity of making its praiſes public, wherever he went.

My pupil Mr. Potter gave calomel and jalap in large doſes, with great ſucceſs in the bilious fever of Caroline county in Maryland, before he knew that I had adopted that purge in the cure of our epidemic. He had heard the hiſtory of its origin and uſe from me, ſome months before, in a converſation upon bilious fevers in my ſhop.

I have only to add to my account of that purging medicine, that under an expectation, that the yellow fever would mingle ſome of its bilious ſymptoms, with the common inflammatory fevers of the winter, and firſt ſpring months, I gave that purge in the form of pills in every caſe of inflammatory fever to which I was called. The fatal iſſue of ſeveral fevers in the city, during the winter, in which this precaution had been neglected, ſatisfied me that my practice was proper and uſeful.

It is to be lamented that all new remedies are forced to paſs through a fiery ordeal. Opium and bark were long the objects of terror and invective in the ſchools of medicine. They were adminiſtered only by phyſicians for many years, and that too with all the ſolemnity of a religious ceremony. This ſuperſtition with reſpect to thoſe medicines, has at laſt paſſed away. It will I hope ſoon be ſucceeded by a time, when the prejudices againſt *ten* and *ten*, or *ten* and *fifteen*, will ſleep with the vulgar fears which were formerly entertained of the bark producing diſeaſes and death, years after it had been taken, by "lying in the bones."

OF BLOOD-LETTING.

THE theory of this fever which led me to adminiſter purges, determined me to uſe blood-letting, as ſoon as it ſhould be indicated. I am diſpoſed to believe, that I was tardy in the uſe of this remedy, and I ſhall long regret the loſs of three patients, who might probably have been ſaved by it. I cannot blame myſelf for not having uſed it earlier, for the immenſe number of patients which poured in upon me, in the firſt week of September, prevented my attending ſo much to each

each of them, as was neceſſary to determine upon the propriety of this evacuation. I was in the ſituation of a ſurgeon in a battle, who runs to every call, and only ſtays long enough with each ſoldier, to ſtop the bleeding of his wound, while the encreaſe of the wounded, and the unexpected length of the battle, leave his original patients to ſuffer from the want of more ſuitable dreſſings. The reaſons which determined me to bleed were,

1. The ſtate of the pulſe, which became more tenſe, in proportion as the weather became cool.

2. The appearance of a moiſt, and *white* tongue on the firſt day of the diſorder; a certain ſign of an inflammatory fever!

3. The frequency of hemorrhagies from every part of the body, and the perfect relief given in ſome caſes, by them.

4. The ſymptoms of congeſtion in the brain reſembling thoſe which occur in the firſt ſtage of hydrocephalus internus, a diſeaſe in which I had lately uſed bleeding with ſucceſs.

5. The character of the diſeaſes which had preceded the yellow fever. They were all more or leſs inflammatory. Even the ſcarlatina anginoſa

had partaken ſo much of that diatheſis, as to require one bleeding to ſubdue it.

6. The warm and dry weather which had likewiſe preceded the fever. Dr. Sydenham attributes a highly inflammatory ſtate of the ſmall-pox, to a previouſly hot and dry ſummer; and I have ſince obſerved that Dr. Hillary, takes notice of inflammatory fevers having frequently ſucceeded hot and dry weather in Barbadoes*. He informs us further, that the yellow fever is always moſt acute and inflammatory, after a very hot ſeaſon†.

7. The authority of Dr. Moſely had great weight with me in adviſing the loſs of blood, more eſpecially as his ideas of the highly inflammatory nature of the fever, accorded ſo perfectly with my own.

8. I was induced to preſcribe blood-letting by recollecting its good effects in Mrs. Palmer's ſon, whom I bled on the 20th of Auguſt; and who appeared to have been recovered by it.

Having begun to bleed, I was encouraged to continue it by the appearance of the blood, and by

* Diſeaſes of Barbadoes, p. 16, 43, 46, 48, 52, 122.

† p. 147.

the

the obvious and very great relief my patients derived from it.

The following is a ſhort account of the appearances of the blood drawn from a vein in this diſorder.

1. It was in the greateſt number of caſes, denſe, and of a ſcarlet colour, without any ſeparation into craſſamentum and ſerum.

2. There was in many caſes a ſeparation of the blood into craſſamentum and *yellow* ſerum.

3. There were a few caſes in which this ſeparation took place, and the ſerum was of a *natural* colour.

4. There were many caſes in which the blood was as ſizy as in pneumony and rheumatiſm.

5. The blood was in ſome inſtances covered above with a blue pellicle of ſizy lymph, while the part which lay in the bottom of the bowl was diſſolved. The lymph was in two caſes, mixed with green ſtreaks.

6. It was in a few inſtances of a dark colour, and as fluid as molaſſes. I ſaw this kind of blood in a man who walked about his houſe during the

whole of his ſickneſs, and who finally recovered. Both this, and the 5th kind of blood which has been mentioned, occurred chiefly where bleeding had been omitted altogether, or uſed too ſparingly in the beginning of the diſorder.

7. The craſſamentum was partly diſſolved in ſome caſes in the ſerum, ſo as to reſemble bloody water. This kind of blood has been compared by authors to the lotura carnium, or waſhings of fleſh.

8. In ſome patients, the blood, in the courſe of the diſeaſe, exhibited nearly *all* the appearances which have been mentioned. They were varied by the time in which the blood was drawn, and by the nature and force of the remedies which had beed uſed in the diſorder.

The effects of blood-letting upon the ſyſtem were as follow:

1. It raiſed the pulſe when depreſſed, and quickened it, when it was preternaturally ſlow, or ſubject to intermiſſions.

2. It reduced its force and frequency.

3. It checked in many caſes, the vomitting which occurred in the beginning of the diſorder, and thereby enabled the ſtomach to retain the purging medicine.

medicine. It likewiſe aſſiſted the purge in preventing the dangerous or fatal vomiting which came on about the 5th. day.

4. It leſſened the difficulty of opening the bowels. Upon this account, in my publication of the 12th of September, I adviſed bleeding to be uſed *before*, as well as after taking the mercurial purge. Dr. Woodhouſe informed me that he had ſeveral times heard patients call for the cloſe ſtool while the blood was flowing from the vein.

5. It removed delirium, coma, and obſtinate wakefulneſs. It alſo prevented or checked hemorrhagies; hence perhaps another reaſon why not a ſingle inſtance of abortion occurred in ſuch of my female patients as were pregnant.

6. It diſpoſed in ſome caſes to a gentle perſpiration.

7. It imparted ſtrength to the ſyſtem; hence patients frequently roſe from their beds, and walked acroſs their rooms in a few hours after the operation had been performed.

8. The redneſs of the eyes frequently diſappeared in a few hours after bleeding. Mr. Coxe

obſerved a dilated pupil to contract to its natural ſize, within a few minutes after he had bound up the arm of his patient. I remarked in the former part of this work, that blindneſs in many inſtances attended or followed this fever. Only two ſuch caſes occurred among my patients. In one of them it was of ſhort continuance, and in the other it was probably occaſioned by the want of ſufficient bleeding. In every caſe of blindneſs that came to my knowledge, bleeding had been omitted, or uſed only in a very moderate degree.

9. It eaſed *pain*. Thouſands can teſtify this effect of blood-letting. Many of my patients whom I bled with my own hand, acknowledged to me while the blood was flowing, that they were better; and ſome of them declared, that all their pains had left them, before I had completely bound up their arms.

10. But blood-letting had in many caſes an effect, the oppoſite of *eaſing* pain. It frequently encreaſed it in every part of the body, more eſpecially in the head. It appeared to be the effect of the ſyſtem riſing ſuddenly from a ſtate of indirect debility, and of an encreaſed action of the blood-veſſels which took place in conſequence of it. I have frequently ſeen complaints of the breaſt, and

of

of the head, made worſe by a ſingle bleeding, and from the ſame cauſe. It was in ſome caſes an unfortunate event in the yellow fever, for it prevented the blood-letting being repeated, by exciting, or ſtrengthening the prejudices of patients and phyſicians againſt it. In ſome inſtances, the patients grew worſe after a ſecond, and in one, after a third bleeding. This was the caſe in Miſs Redman. Her pains encreaſed after three bleedings, but yielded to the fourth. Her father Dr. Redman concurred in this ſeemingly abſurd practice. It was at this time, my old maſter reminded me of Dr. Sydenham's remark, that moderate bleeding did harm in the plague, where copious bleeding was indicated, and that in the cure of that diſorder, we ſhould leave nature wholly to herſelf, or take the cure altogether out of her hands. The truth of this obſervation was very obvious. By taking away as much blood as reſtored the blood-veſſels to a morbid degree of action, without reducing this action afterwards, pain, congeſtion, and inflammation, were frequently encreaſed, all of which were prevented, or occurred in a leſs degree, when the ſyſtem roſe gradually from the ſtate of depreſſion which had been induced by indirect debility. Under the influence of the facts and reaſonings which have been mentioned, I bore the ſame teſtimony in

acute

acute caſes, againſt what was called *moderate* bleeding, that I did againſt bark, wine, and laudanum in this fever.

11. Blood-letting when uſed *early* on the firſt day, frequently ſtrangled the diſeaſe in its birth, and generally rendered it more light, and the convaleſcence more ſpeedy and perfect. I am not ſure that it ever ſhortened the duration of the fever where it was not uſed within a few hours of the time of its attack. Under every mode of treatment, it ſeemed diſpoſed after it was completely formed to run its courſe. I was ſo ſatisfied of this peculiarity in the fever, that I ventured in ſome caſes to predict the day on which it would terminate, notwithſtanding I took the cure entirely out of the hands of nature. I did not loſe a patient on the third, whom I bled on the firſt, or ſecond day of the diſorder.

12. In thoſe caſes which ended fatally, blood-letting reſtored, or preſerved the uſe of reaſon, rendered death eaſy, and retarded the putrefaction of the body after death.

I ſhall now mention ſome of the circumſtances which directed and regulated the uſe of this remedy.

1. Where

1. Where bleeding had been omitted, for three days, in acute cafes it was ſeldom uſeful. Where purging had been uſed, it was ſometimes ſucceſsful. I recovered two patients who had taken the mercurial purges, whom I bled for the firſt time on the 7th day. One of them was the daughter of Mr. James Creſſon; the other was a journeyman ſhipcarpenter at Kenſington. In thoſe caſes where bleeding had been uſed on the firſt day, it was both ſafe and uſeful to repeat it every day afterwards, during the continuance of the fever.

2. I preferred bleeding in the exacerbation of the fever. The remedy here was applied when the diſeaſe was in its greateſt force. A ſingle paroxiſm, was like a ſudden ſqall of the ſyſtem, and unleſs abated by bleeding, or purging, produced univerſal diſorganization. I preferred the former, to the latter remedy, in caſes of great danger, becauſe it was more ſpeedy, and more certain in its operation.

3. I bled in ſeveral inſtances in the remiſſion of the fever, where the pulſe was tenſe or chorded, more eſpecially if the patient were unable to ſit up without fainting. The bleeding in theſe caſes leſſened the violenceof the ſucceeding paroxiſm.

4. I

4. I bled in all thoſe caſes in which the pulſe was preternaturally ſlow, provided it was tenſe. Mr. Benj. W. Morris, Mr. Thomas Wharton Jun. and Mr. Wm. Sanſom, all owe their lives probably to their having been bled in the above ſtate of the pulſe. I was led to uſe bleeding in this ſtate of the pulſe, not only by the theory of the diſeaſe which I had adopted, but by the ſucceſs which had often attended this remedy, in a ſlow and depreſſed ſtate of the pulſe in apoplexy and pneumony. I had, moreover, the authority of Dr. Moſely in its favour, in the yellow fever, and of Dr. Sydenham, in his account of a new fever, which appeared in the year 1685. The words of the latter phyſician are ſo oppoſite to the caſes which have been mentioned, that I hope I ſhall be excuſed for inſerting them in this place. "All the ſymptoms of weakneſs (ſays our author) proceed from nature's being in a manner oppreſſed, and overcome by the firſt attack of the diſeaſe, ſo as not to be able to raiſe regular ſymptoms adequate to the violence of the fever. I remember to have met with a remarkable inſtance of this ſeveral years ago, in a young man I then attended; for though he ſeemed in a manner expiring, yet the outward parts felt ſo cool, that I could not perſuade the attendants he had a fever, which could not diſengage, and ſhew itſelf clearly, becauſe the veſſels were ſo full as to obſtruct

ſtruct the motion of the blood. However, I ſaid, that they would ſoon find the fever riſe high enough upon bleeding him. Accordingly after taking away a large quantity of blood, as violent a fever appeared as ever I met with, and did not go off till bleeding had been uſed three or four times*."

5. I bled in thoſe caſes in which the fever appeared in a tertian form, provided the pulſe was full and tenſe. I well recollect the ſurpriſe with which Mr. Van Berkel heard this preſcription from me, at a time when he was able to walk and ride out on the intermediate days of a tertian fever. The event which followed this preſcription, ſhewed that it was not diſproportioned to the violence of his diſeaſe, for it ſoon put on ſuch acute and inflamatory ſymptoms as to require ſix ſubſequent bleeding to ſubdue it.

6. I bled in thoſe caſes where patients were able to walk about, provided the pulſe was the ſame as has been mentioned under the 4th head. I was determined as to the propriety of bleeding in theſe two ſuppoſed mild forms of the fever, by having obſerved each of them when left to themſelves frequently to terminate in death.

* Vol. ii. p. 351.

7. I paid no regard to the diſſolved ſtate of the blood, when it appeared on the firſt or ſecond day of the diſorder, but repeated the bleedings afterwards in every caſe, where the pulſe continued to indicate it. It was common to ſee ſizy blood ſucceed that which was diſſolved. This occurred in Mr. Joſiah Coates, and Mr Samuel Powel. Had I believed that this diſſolved ſtate of the blood aroſe from its putrefaction, I ſhould have laid aſide my lancet as ſoon as I ſaw it; but I had long ago parted with all ideas of putrefaction in bilious fevers. The refutation of this doctrine, was the object of one of my papers in the Medical Society of Edinburgh, in the year 1767. The diſſolved appearance of the blood, I ſuppoſe to be the effect of a certain action of the blood-veſſels upon it. It occurs in fevers in which no putrid, or foreign matter has been introduced into the ſyſtem. The typhoid pneumony deſcribed by Dr. Huxham in his epidemics, and well known in the ſouthern ſtates of America, in the ſpring of the year, has never, been aſcribed to any other remote cauſe, than the ſenſible qualities of the air, and yet the blood is generally diſſolved in this diſorder.

8. The preſence of petechiæ did not deter me from repeating blo d-letting, where the pulſe retained its fulneſs or tenſion. I preſcribed it with ſucceſs in the caſes of Dr. Meaſe, and of Mrs. Gibler,

Gibler, in Dock-ſtreet, in each of whom petechiæ had appeared. Bleeding was equally effectual in the caſe of the Rev. Mr. Keating at a time when his arms were ſpotted with that ſpecies of eruptions which I have compared to Moſchetto bites. I had precedents in Dr. De Haen*, and Dr. Sydenham†, in favour of this practice. So far from viewing theſe eruptions as ſigns of putrefaction, I conſidered them as marks of the higheſt poſſible inflammatory diatheſis. They diſappeared in each of the above caſes after bleeding.

9. In determining the quantity of blood to be drawn, I was governed by the ſtate of the pulſe, and by the temperature of the weather. In the beginning of September I found one or two moderate bleedings ſufficient to ſubdue the fever; but in proportion as the ſyſtem aroſe by the diminuition of the ſtimulus of heat, and the fever put on more *viſible* ſigns of inflammatory diatheſis, more frequent bleedings became neceſſary. I bled many patients twice, and a few three times a day. I preferred frequent and ſmall, to large bleedings in the beginning of September; but towards the height and cloſe of the epidemic, I

* Ratio medendi, vol. ii. p. 162. vol. iv. p. 172.

† Vol. i. p. 210, and 2644.

ſaw no inconvenience from the loſs of a pint, and even twenty ounces of blood at a time. I drew from many perſons ſeventy and eighty ounces in five days; and from a few, a much larger quantity. Mr. Gribble, cedar-cooper, in Front-ſtreet, loſt by ten bleedings an hundred ounces of blood; Mr George, a carter in Ninth-ſtreet, loſt about the ſame quantity by five bleedings; and Mr Peter Mierken, one hundred and fourteen ounces in five days. In the laſt of the above perſons the quantity taken, was determtned by weight. Mr Toy, blackſmith near Dock-ſtreet, was eight times bled in the courſe of ſeven days. The quantity taken from him was about an hundred ounces. The blood in all theſe caſes was denſe, and in the laſt very ſizy. They were all attended in the month of October, and chiefly by my pupil Mr Fiſher; and they are all this day living and healthy inſtances of the efficacy of copious blood-letting, and of the intrepidity and judgement of their young phyſician. Children and even old people, bore the loſs of much more blood in this fever, than in common inflammatory fevers. I took above thirty ounces, in five bleedings from a daughter of Mr. Robert Bridges, who was then in the 9th year of her age. Even great debility, whether natural or brought on by previous diſeaſes, did not in thoſe few caſes in which it yielded to the fever, deprive

it of the uniformity of its inflammatory character. The following letter from my friend Dr Griffitts, written ſoon after his recovery from a third attack of the fever, and juſt before he went into the country for the re-eſtabliſhment of his health, will furniſh a ſtriking illuſtration of the truth of the above obſervation.

"I cannot leave town without a parting adieu to my kind friend, and ſincere prayers for his preſervation.

I am ſorry to find that the uſe of the lancet is ſtill ſo much dreaded by too many of our phyſicians; and while lamenting the death of a valuable friend this morning, I was told that he was bled but *once* during the diſorder. Now, if my poor frame, reduced by previous ſickneſs, great anxiety, and fatigue, and a very low diet, could bear *ſeven* bleedings in five days, beſides purging, and no diet, but toaſt and water, what ſhall we ſay of phyſicians who bleed but once?"

October 19, 1793.

I have compared a paroxyſm of this fever to a ſudden ſquall; but the diſeaſe in its whole courſe was like a tedious equinoctial gale, acting upon a ſhip at ſea; its deſtructive force was only to be

oppoſed by handing every ſail, and leaving the ſyſtem to float, as it were, under bare poles. Such was the fragility (if I may be allowed the expreſſion) of the blood veſſels, that it was neceſſary to unload them of their contents, in order to prevent the ſyſtem ſinking, from hemorrhagies, or from effuſions in the viſcera, particularly the brain.

9. Such was the indomitable nature of the pulſe in ſome patients, that it did not loſe its force after numerous and copious bleedings. In all ſuch caſes, I conſidered the diminution of its frequency, and the abſence of vomiting, as ſignals to lay aſide the lancet. The continuance of this preternatural force in the pulſe, appeared to be owing to the contagion which was univerſally diffuſed in the air, acting upon the arterial ſyſtem in the ſame manner that it did in perſons who were in apparent good health.

Thus have I mentioned the principal circumſtances which were connected with blood-letting, in the cure of the yellow fever. I ſhall now conſider the objections that were made to it at the time, and ſince the prevalence of the fever.

It was ſaid that the bleeding was unneceſſarily copious; and that many had been deſtroyed by it.

To

To this I anſwer, That I did not loſe a ſingle patient whom I bled ſeven times, or oftner, in this fever. As a further proof that I did not draw an ounce of blood too much, it will only be neceſſary to add, that hemorrhagies frequently occurred after a third, a fourth, and in one inſtance (in the only ſon of Mr. William Hall) after a ſixth bleeding had been uſed; and further, that not a ſingle death occurred from natural hemorrhagies in the firſt ſtage of the diſorder. A woman who had been bled by my advice, awoke the night following in a bath of her blood, which had flowed from the orifice in her arm. The next day ſhe was free from pain and fever. There were many recoveries in the city from ſimilar accidents. There were likewiſe ſome recoveries from copious natural hemorrhagies in the more advanced ſtages of the diſorder, particularly when they occurred from the ſtomach and bowels. I left a ſervant maid of Mrs. Morris's in Walnut-ſtreet, who had diſcharged at leaſt four pounds of blood from her ſtomach, without a pulſe, and with ſcarcely a ſymptom that encouraged a hope of her life; but the next day I had the pleaſure of finding her out of danger.

It is remarkable that fainting was much leſs common after bleeding in this fever, than in com-

mon inflammatory fevers. This circumſtance was obſerved by Dr. Griffitts, as well as myſelf. It has ſince been confirmed to me by three of the principal bleeders in the city, who performed the operation upwards of four thouſand times. It occurred chiefly in thoſe caſes where it was uſed for the firſt time on the third or fourth day of the diſcaſe. A ſwelling of the legs, moreover, ſo common after plentiful bleeding in pneumony and rheumatiſm, rarely ſucceeded the uſe of this remedy in the yellow fever.

2. Many of the indiſpoſitions, and much of the accidental weakneſs of perſons who had been cured by copious blood-letting, have been aſcribed to it. This is ſo far from being true, that the reverſe of it has occurred in many caſes. Mr. Mierken worked in his ſurgar-houſe in good health, nine days after his laſt bleeding; and Mr. Gribble, and Mr. George ſeem by their appearance to have derived freſh vigour from their evacuations. I could mention the names of many people who think their conſtitutions have been improved by the uſe of thoſe remedies; and I know ſeveral perſons in whom they have carried off habitual complaints. Mr Richard Wells attributes his relief from a chronic rheumatiſm to the copious bleeding and purging which where uſed to cure him of the

the yellow fever; and Mr. William Young, the bookſeller, was relieved of a chronic pain in his ſide, by means of the ſame remedies.

3. It was ſaid, that blood-letting was preſcribed indiſcriminately in all caſes, without any regard to age, conſtitution, or the force of the diſeaſe. This is not true as far as it relates to my practice. In my preſcriptions for patients whom I was unable to viſit, I adviſed them, when they were incapable of judging of the ſtate of the pulſe, to be guided in the uſe of bleeding, by the degrees of pain they felt, particularly in the head; and I ſeldom adviſed it for the *firſt* time, after the ſecond, or third day of the diſorder.

In pneumonies which affect whole neighbourhoods in the ſpring of the year, bleeding is the univerſal remedy. Why ſhould it not be equally ſo, in a fever which is of a more uniform inflammatory nature, and which tends more rapidly to effuſions, in parts of the body, much more vital than the lungs?

I have before remarked, that the debility which occurs in the yellow fever, is of the indirect kind. The debility in the plague is of the ſame nature. It has long been known that direct debility is to

be removed by the *gradual* application of ſtimuli, but it has been leſs obſerved, that the exceſs of ſtimulus in the ſyſtem is beſt removed in a *gradual* manner, and that too, in proportion to the degrees of indirect debility, which exiſt in the ſyſtem.

This principle in the animal economy has been acknowledged by the practice of occaſionally ſtopping the diſcharge of water from a canula in tapping, and of blood from a vein, in order to prevent fainting.

Child-birth, induces fainting, and ſometimes death, only by the *ſudden* abſtraction of the ſtimulus of diſtention and pain.

In all thoſe caſes where purging or bleeding have produced death in the yellow fever or plague, when they have been uſed on the firſt or ſecond day of thoſe diſorders, I ſuſpect that it was occaſioned by the quantity of the ſtimulus abſtracted being diſproportioned to the degrees of indirect debility. The following facts will I hope throw light upon this ſubject.

1. Dr. Hodges informs us, that "although blood could not be drawn in the plague, even in the

the ſmalleſt quantity without danger, yet an *hundred* times the quantity of fluids, was diſcharged in pus from buboes without inconvenience*."

2. Pareus, after condemning bleeding in the plague, immediately adds an account of a patient, who was ſaved by an hemorrhage from the noſe which continued *two* days†.

3. I have before remarked that bleeding proved fatal in three caſes in the yellow fever in the months of Auguſt; but at that time, I ſaw one, and heard of another caſe, in which death ſeemed to have been prevented by a bleeding at the noſe. Perhaps the uniform good effects which were obſerved to follow a ſpontaneous hemorrhage from an orifice in the arm, aroſe wholly from the *gradual* manner in which the ſtimulus of the blood was in this way abſtracted from the body. Dr. Williams relates a caſe of the recovery of a gentleman from the yellow fever by means of ſmall hemorrhagies which continued three days from wounds in his ſhoulders made by being cupped. He likewiſe mentions ſeveral other recoveries by hemorrhagies from the noſe, after "a vomit-

* Page 114.

† Shenkius, Lib. vi. p. 881.

ing of black humours, and a hiccup had taken place*."

4. There is a diſeaſe in North Carolina known among the common people by the name of the "pleuriſy in the head." It occurs in the winter after a ſickly autumn, and ſeems to be an evaneſcent ſymptom of a bilious remitting fever. The cure of it has been attempted by bleeding, in the common way, but generally without ſucceſs. It has, however, yielded to this remedy in another form, that is, to the diſcharge of a few ounces of blood obtained by thruſting a piece of quill up the noſe.

5. Riverius deſcribes a peſtilential fever which prevailed at Montpelier in the year 1623, which carried off one half of all who were affected by it†. After many unſucceſsful attempts to cure it, this judicious phyſician preſcribed the loſs of *two* or *three* ounces of blood. The pulſe roſe with this ſmall evacuation. Three or four hours afterwards, he drew ſix ounces of blood from his patients, and with the ſame good effect. The next

* Eſſay on the Bilious or Yellow Fever of Jamaica, p. 40.

† De Febre Peſtilenti, vol. ii. p. 145, 146, and 147.

day,

day, he gave a purge, which he ſays reſcued his patients from the grave. All whom he treated in this manner recovered. The whole hiſtory of this epidemic is highly intereſting, from its agreeing with our late epidemic in ſo many of its ſymptoms, more eſpecially as they appeared in the different ſtates of the pulſe.

An old and intelligent citizen of Philadelphia, who remembers the yellow fever of 1741, ſays that when it firſt made its appearance, bleeding was attended with fatal conſequences. It was laid aſide afterwards, and the diſeaſe prevailed with great mortality until it was checked by the cold weather. Had blood been drawn in the manner mentioned by Riverius, or had it been drawn in the uſual way, after the abſtraction of the ſtimulus of heat by the cool weather, the diſeaſe might probably have been ſubdued, and the remedy of blood-letting, thereby have recovered its character.

Dr Hodges has another remark in his account of the plague in London in the year 1665, which is ſtill more to our purpoſe than the one which I have quoted from it upon this ſubject. He ſays that "bleeding as a preventive of the plague was only ſafe and uſeful, when the blood was drawn by

by a *ſmall* orifice, and a *ſmall* quantity taken at *different* times*."

I have remarked in the hiſtory of the yellow fever of laſt autumn, that it was often cured on the firſt or ſecond day by a copious ſweat. The Rev. Mr. Uſtick was one among many whom I could mention, who were ſaved from a violent attack of the fever, by this evacuation. It would be abſurd to ſuppoſe that the contagion which produced the diſeaſe was diſcharged in this manner from the body. The ſweat ſeemed to cure the fever, only by leſſening the quantity of the fluids, and thus *gradually* removing the indirect debility of the ſyſtem. The profuſe ſweats which ſometimes cure the plague, as well as the diſeaſe which is brought on by the bite of poiſonous ſnakes, ſeem to act in the ſame way.

The ſyſtem under the impreſſion of the contagion of a malignant fever, reſembles a man ſtruggling beneath a load of two hundred weight, who is able to lift only one hundred and ſeventy-five. In order to aſſiſt him, it will be to no purpoſe to attempt to infuſe additional vigour into his muſcles by the uſe of a whip or of ſtrong drink.

* Page 209.

Every

Every exertion will ſerve only to waſte his ſtrength. In this ſituation (ſuppoſing it impoſſible to divide the weight which confines him to the ground) let the pockets of this man be emptied of their contents, and let him be ſtripped of ſo much of his clothing, as to reduce his weight five and twenty or thirty pounds. In this ſituation he will riſe from the ground; but if the weights be abſtracted ſuddenly, while he is in an act of exertion, he will riſe with a ſpring that will endanger a ſecond fall, and probably produce a temporary convulſion in his ſyſtem. By abſtracting the weights from his body more gradually, he will riſe by degrees from the ground, and the ſyſtem will accommodate itſelf in ſuch a manner to the diminution of its preſſure, as to reſume its erect form, without the leaſt deviation from the natural order of its appearance and motions.

It has been ſaid that the ſtimulating remedies of bark, wine, and the cold bath, were proper in our late epidemic in Auguſt, and in the beginning of September, but that they were improper afterwards. If my theory be juſt, they were more improper in Auguſt, and the beginning of September, than they were after the diſeaſe put on the outward and common ſigns of inflammatory diatheſis. The reaſon why a few ſtrong purges cured

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the diſeaſe at its firſt appearance was, becauſe they abſtracted in a *gradual* manner ſome of the immenſe portion of ſtimulus under which the arterial ſyſtem laboured, and thus gradually relieved it from its low degrees of indirect debility. Bleeding was fatal in theſe caſes, only becauſe it removed this indirect debility in too ſudden a manner.

The principle of the gradual abſtraction, as well as of the gradual application of ſtimuli to the body, in all the diſeaſes of indirect debility on the one hand, and of direct, on the other, opens a wide field for the improvement of medicine. Perhaps all the diſcoveries of future ages will conſiſt more in a new application of eſtabliſhed principles, and in new modes of exhibiting old medicines, than in the diſcovery of new theories, or of new articles of the Materia Medica.

The reaſons which induced me to preſcribe purging and bleeding, in ſo liberal a manner, naturally led me to recommend COOL and FRESH AIR to my patients. The good effects of it were obvious in almoſt every caſe in which it was applied. It was equally proper whether the arterial ſyſtem was depreſſed, or whether it diſcovered in the pulſe, a high degree of morbid excitement. Dr Griffits

Griffitts furniſhed a remarkable inſtance of the influence of cool air upon the fever. Upon my viſiting him on the morning of the eighth of October, I found his pulſe ſo full and tenſe, as to indicate bleeding, but after ſitting a few minutes by his bed-ſide, I perceived that the windows of his room had been ſhut in the night by his nurſe, on account of the coldneſs of the night air. I deſired that they might be opened. In ten minutes afterwards, the Doctor's pulſe became ſo much ſlower and weaker, that I adviſed the poſtponement of the bleeding, and recommended a purge inſtead of it. The bleeding notwithſtanding became neceſſary, and was uſed with great advantage in the afternoon of the ſame day.

The cool air was improper only in thoſe caſes where a chillineſs attended the diſeaſe.

For the ſame reaſon that I adviſed cool air, I directed my patients to uſe cold DRINKS. They conſiſted of lemonade, tamarind, jelly, and raw apple water, toaſt and water, and of weak balm, and camomile tea. The ſubacid drinks were preferred in moſt caſes, as being not only moſt agreeable to the taſte, but becauſe they tended to correct by mixture, the acrid quality of the bile. All theſe drinks were taken in the early ſtage of the diſorder.

diſorder. Towards the cloſe of it, I permitted the uſe of porter and water, weak punch, and when the ſtomach would bear it, weak wine-whey.

I forbad all cordial and ſtimulating food in the active ſtate of the arterial ſyſtem. The leſs my patients ate, of even the mildeſt vegetable food, the ſooner they recovered. Weak coffee, which (as I have formerly remarked) was almoſt univerſally agreeable, and weak tea were always inoffenſive. As the action of the pulſe diminiſhed, I indulged my patients with weak chocolate; alſo with milk, to which roaſted apples, or minced peaches, and (where they were not to be had) bread, or Indian muſh were added.

Towards the criſis, I adviſed the drinking of weak chicken, veal, or mutton broth, and after the criſis had taken place, I permitted mild animal food to be eaten in a ſmall quantity, and to be increaſed according to the waſte of the excitability of the ſyſtem. This ſtrict abſtinence which I impoſed upon my patients did not eſcape obloquy, but the benefits they derived from it, and the ill effects which aroſe in many caſes from a contrary regimen, ſatisfied me that it was proper in every caſe in which it was preſcribed.

Cold water was a moſt agreeable and powerful remedy in this diſorder. I directed it to be applied by means of napkins to the head, and to be injected into the bowels by way of glyſter. It gave the ſame eaſe to both, when in pain, which opium gives to pain from other cauſes. I likewiſe adviſed the waſhing of the face and hands, and ſometimes the feet with cold water, and always with advantage. It was by ſuffering the body to lie for ſome time in a bed of cold water, that the inhabitants of the iſland of Maſſuah cured the moſt violent bilious fevers*. When applied in this way, it *gradually* abſtracts the heat from the body, and thereby leſſens the action of the ſyſtem. It differs as much in its effects upon the body from the cold bath, as reſt in a cold room, differs from exerciſe in the cold and open air.

I was firſt led to the practice of the partial application of cold water to the body, in fevers of too much force in the arterial ſyſtem, by obſerving its good effects in active hemorrhagies, and by recollecting the effects of a partial application of warm water to the feet, in fevers of an oppoſite character. Cold water when applied to the feet as certainly reduces the pulſe in force and fre-

* Bruce's Travels.

quency,

quency as warm water applied in the ſame way, produces contrary effects upon it. In an experiment which was made at my requeſt by one of my pupils, by placing his feet in cold pump water for a few minutes, the pulſe was reduced 24 ſtrokes in a minute, and became ſo weak as hardly to be perceptible.

In the uſe of the remedies which were neceſſary to overcome the inflammatory action of the ſyſtem, I was obliged to reduce it below its natural point of excitement. In the preſent imperfect ſtate of our knowledge in medicine, perhaps no diſeaſe of too much action, can be cured without it.

I have ſaid in another place, that I was early obliged to deſiſt from the uſe of wine, bark, and laudanum in the firſt ſtage of this diſorder. I found them as offenſive to the ſtomach, and nearly as hurtful in its ſecond ſtage, as I had found them in its firſt. In this ſituation new reſources in the materia medica were opened to me. I had obſerved a favourable iſſue of the fever in every caſe, in which a ſpontaneous diſcharge took place from the ſalivary glands. I had obſerved further, that all ſuch of my patients (one excepted) as were ſalivated by the mercurial purges recovered in a few

days. This early ſuggeſted an idea to me that the calomel might be applied to other purpoſes, than the diſcharging of bile from the bowels. I aſcribed its ſalutary effects when it ſalivated in the firſt ſtage of the diſorder, to the excitement of inflammation and effuſion in the throat, diverting them from more vital parts of the body. In the ſecond ſtage of the diſorder, I was led to preſcribe it as a ſtimulant, and with a view of obtaining this operation from it, I aimed in all caſes to obtain a ſalivation as ſpeedily as poſſible. Two precedents encouraged me to make trial of this remedy.

In the month of October 1789, I attended a gentleman in a bilious fever, which ended in many of the ſymptoms of a typhus mitior. In the loweſt ſtate of his fever, he complained of a pain in his right ſide, for which I ordered half an ounce of mercurial ointment to be rubbed on the part affected. The next day, he complained of a ſore mouth, and in the courſe of four and twenty hours, he was in a moderate ſalivation. From this time his pulſe became full and ſlow, and his ſkin moiſt. His ſleep and appetite ſuddenly returned, and in a day or two he was out of danger. The ſecond precedent for a ſalivation in a fever, which occurred to me was in Dr. Haller's ſhort account of the

works of Dr. Cramer*, and which I had a year before copied into my note book. The practice was moreover, juſtified in point of ſafety as well as the probability of ſucceſs, by the accounts which Dr. Clark has lately given of the effects of a ſalivation in the dyſentery†. I began by preſcribing the calomel in ſmall doſes, at ſhort intervals, and afterwards I directed large quantities of the ointment to be rubbed upon the limbs. The effects of it in every caſe in which it affected the mouth, were ſalutary. Dr. Woodhouſe improved upon my method of exciting the ſalivation, by rubbing the gums with calomel, in the manner directed by Mr. Clare. It was more ſpeedy in its operation in this way than in any other, and equally effectual. Several perſons appeared to be benefitted by the mercury introduced into the ſyſtem in the form of an ointment, where it did not produce a ſalivation. Among theſe, were the Rev. Dr. Blăckwell, and Mr. John Davis.

Since the above account was written of the good effects of a mercurial ſalivation in this fever, I have had great ſatisfaction in diſcovering that it was preſcribed with equal, and even greater ſucceſs, by Dr. Wade in Bengal, in the year 1791, and by Mr.

* Bibliotheca Medicinæ Practicæ, vol. iii. p. 491.

† Diſeaſes of long voyages to Hot Climates, vol. ii. p. 334.

Chiſholm

Chiſholm in the iſland of Grenada, in the cure of bilious yellow fevers*. Dr. Wade did not loſe one, and Mr. Chiſholm loſt only one, out of forty-eight patients in whom the mercury affected the ſalivary glands. The latter gave 150 grains of calomel, and applied the ſtrongeſt mercurial ointment below the groin of each ſide, in ſome caſes. He adds further, that not a ſingle inſtance of a relapſe occurred, where the diſeaſe was cured by ſalivation.

After the reduction of the ſyſtem, *bliſters* were applied with great advantage to every part of the body. They did moſt ſervice when they were applied to the crown of the head. I did not ſee a ſingle caſe, in which a mortification followed the ſore, which was created by a bliſter.

Brandy and water, or porter and water, when acceptable to the ſtomach, with now and then a cup of chicken broth, were the drinks I preſcribed to aſſiſt in reſtoring the tone of the ſyſtem.

In ſome caſes I directed the limbs to be wrapped in flannels dipped in warm ſpirits, and cataplaſms of bruiſed garlic to be applied to the feet. But my principal dependence, next to the uſe of mercurial medicines, for exciting a healthy action in the arterial ſyſtem, was upon mild and gently ſti-

* Medical Commentaries, vol. xviii. p. 209. 288.

mulating food. This conſiſted of rice broths, the fleſh of poultry, oyſters, thick gruel, muſh and milk, and chocolate. I directed my patients to eat or drink a portion of ſome of the above articles of diet every hour or two during the day, and in caſes of great debility, I adviſed their being waked for the ſame purpoſe two or three times in the night. The appetite frequently craved more ſavoury articles of food, ſuch as beef-ſtakes, and ſauſages; but they were permitted with great caution, and never till the ſyſtem had been prepared for them by a leſs ſtimulating diet.

There were ſeveral *ſymptoms* which were very diſtreſſing in this diſorder, and which required a ſpecific treatment.

For the vomiting, with a burning ſenſation in the ſtomach, which came on about the 5th day, I found no remedy equal to a table ſpoonful of ſweet milk taken every hour, or to ſmall draughts of milk and water. I was led to preſcribe this ſimple medicine, from having heard from a Weſt India practitioner, and afterwards read in Dr. Hume's account of the yellow fever, encomiums upon the milk of the cocoa-nut for this troubleſome ſymptom. Where ſweet milk failed of giving relief, I preſcribed ſmall doſes of ſweet oil, and in ſome caſes a mixture of equal parts of milk, ſweet

oil

oil and molaſſes. They were all intended to dilute, or blunt the acrimony of the humors which were either effuſed, or generated in the ſtomach. Where they all failed of checking the vomiting, I preſcribed weak camomile tea, or porter, or cyder and water, with advantage. In ſome of my patients, the ſtomach rejected all the mixtures, and liquors which have been mentioned. In ſuch caſes, I directed the ſtomach to be left to itſelf for a few hours, after which it ſometimes received and retained the drinks that it had before rejected, provided they were adminiſtered in a ſmall quantity at a time.

The vomiting was ſometimes ſtopped by a bliſter applied to the external region of the ſtomach.

A mixture of liquid laudanum and ſweet oil, applied to the ſame place, gave relief where the ſtomach was affected by pain only, without a vomiting.

I have formerly mentioned that a diſtreſſing *pain* often ſeized the lower part of the *bowels*. I was early taught that laudanum was not a proper remedy for it. It yielded in almoſt every caſe, to two or three emollient glyſters, or to the loſs of a few ounces of blood.

The convaleſcence from this fever was in general rapid, but in ſome caſes it was very ſlow. I was more than uſually ſtruck by the great reſemblance which the ſyſtem in the convaleſcence from this fever, bore to the ſtate of the body and mind in old age. It appeared, 1. in the great weakneſs of the body, more eſpecially of the limbs. 2. In uncommon depreſſion of the mind, and in a great aptitude to ſhed tears. 3. In the abſence or ſhort continuance of ſleep. 4. In the frequent occurrence of appetite, and in ſome caſes in its inordinate degrees. And 5. In the loſs of the hair of the head, or its being ſuddenly changed in ſome caſes to a grey colour.

Pure air, gentle exerciſe, and agreeable ſociety, removed the debility both of body and mind of this premature, and temporary old age. I met with a few caſes, in which the yellow colour continued for ſeveral weeks after the patient's recovery from all the other ſymptoms of the fever. It was removed moſt ſpeedily and effectually by two or three moderate doſes of calomel and rhubarb.

A feeble and irregular intermittent, was very troubleſome in ſome people, after an acute attack of the fever. It yielded gradually to camomile or ſnake-root tea, and country air.

In

In a publication dated the 16th of September, I recommended a diet of milk and vegetables, and cooling purges to be taken once or twice a week, to the citizens of Philadelphia. This advice was the reſult of the theory of the diſeaſe I had adopted, and of the ſucceſsful practice which had ariſen from it. In my intercourſe with my fellow citizens, I adviſed this regimen to be regulated by the degrees of fatigue and contagion to which they were expoſed. I likewiſe adviſed moderate blood-letting to all ſuch perſons as were of a plethoric habit. To men whoſe minds were influenced by the publications in favour of bark and wine, and who were unable at that time to graſp the extent and force of the contagion of this terrible fever, the idea of dieting, purging, or bleeding the inhabitants of a whole village or city, appeared to be extravagant and abſurd: But I had many precedents, beſides the authority of reaſon, in favour of the advice. Dr Mitchell recommended moderate bleeding with ſucceſs, as a preventive of the yellow fever in Virginia, in the year 1741. A military ſurgeon belonging to the French troops at Hiſpaniola, aſſured Dr. Foulke that he had for many years bled the recruits from France, as ſoon as they arrived, and thereby ſecured them from a ſeaſoning by the yellow fever. The leſs mortality of this diſorder in the French and Spa-

niſh, than in the Engliſh Iſlands, has been juſtly attributed to the natives of France and Spain carrying with them to the Weſt Indies more temperate habits, in the uſe of wine and animal food, than the natives Great Britain. I had moreover, the analogy of the regimen made uſe of to prepare the body for the ſmall pox and plague, in favour of this advice. Dr. Haller has given extracts from the hiſtories of two plagues, in which the action of the contagion was preventd or mitigated, by bleeding*. Dr. Hodges confirms the utility of the ſame practice. The benefits of low diet, as a preventive of the plague, were eſtabliſhed by many authors, long before they received the teſtimony of the benevolent Mr. Howard in their favour. Socrates in Athens, and Juſtinian in Conſtantinople, were preſerved by means of their abſtemious modes of living, from the plagues which occaſionally ravaged thoſe cities. By means of the low diet, gentle phyſic, and occaſional bleedings, which I thus publicly recommended, the diſeaſe was prevented in many inſtances, or rendered mild where it was taken. But my efforts to prevent the diſeaſe in my fellow citizens, did not end here. I adviſed them, not only in the public papers, but in my inter-

* Bibliotheca Medicinæ Practicæ, vol. ii. p. 93, and 387.

courſe

courſe with them, to avoid heat, cold, labour, and every thing elſe that could excite the contagion (which I knew to be preſent in all their bodies) into action. I forgot upon this occaſion the uſual laws which regulate the intercourſe of man with man in the ſtreets; and upon the public roads, in my excurſions into the neighbourhood of the city, I cautioned many perſons whom I ſaw walking or riding in an unſafe manner of the danger to which they expoſed themſelves; and thereby, I hope, prevented an attack of the diſorder in many people. If in a ſingle inſtance I unhappily excited an emotion of terror in a fellow citizen, by this conduct, I thus humbly aſk his pardon. There ſhould be no ceremony in calling to a man to avoid a precipice, or in pulling him out of a fire.

It was from a conviction of the utility of low diet, gentle evacuations, and of carefully ſhunning all the exciting cauſes which I have mentioned, that I concealed in no inſtance from my patients, the name of their diſorder. This plainneſs, which was blamed by weak people, produced ſtrict obedience to my directions, and thereby limited the propagation of the fever in many families, or rendered it when taken, as mild as inoculation does the ſmall-pox. The oppoſite conduct of ſeveral

veral phyſicians, by preventing the above precautions, encreaſed the mortality of the diſeaſe; and in ſome inſtances contributed to the extinction of whole families. Such have been, and ever will be, the effects of ignorance and fraud in the profeſſion of medicine.

I proceed now to make a few remarks upon the remedies recommended by Doctors Kuhn and Stevens, and by the French phyſicans.

Had the whole materia medica been ranſacked, there could not been found any three medicines more oppoſite to the diſorder than bark, wine, and laudanum. In every caſe in which I preſcribed bark, it was offenſive to the ſtomach. In ſeveral mild tertians which attended the convaleſcence from a common attack of the fever, I found it always unſucceſsful, and once hurtful. Mr. Willing took it for ſeveral weeks without effect. About half a pint of a weak decoction of the bark produced in Mr. Samuel Meredith, a paroxiſm of the fever, ſo violent as to require the loſs of ten ounces of blood to moderate it. Dr. Annan informed me that he was forced to bleed one of his patients twice, after having given him a ſmall quantity of bark, to haſten his convaleſcence. If in any caſe it was inoffenſive, or did ſervice, I

ſuſpect

ſuſpect it muſt have acted upon the bowels as a purge. Dr Sydenham ſays the bark cured intermittents by this evacuation*; and Mr. Bruce ſays it operated in the ſame way, when it cured the bilious fevers at Maſſuah.

Wine was nearly as diſagreeable as the bark to the ſtomach, and equally hurtful. I tried it in every form, and of every quality, but without ſucceſs. It was either rejected by the ſtomach, or produced in it a burning ſenſation. I ſhould ſuſpect that I had been miſtaken in my complaints againſt wine, had I not ſince met with an account in Skenkius of its having deſtroyed all who took it in the famous Hungarian fever, which prevailed with great mortality over nearly every country in Europe, about the middle of the 16th century†. Dr. Wade declares wine to be "ill adapted to the fevers of Bengal, where the treatment has been proper in other reſpects."

Laudanum has been called by Dr. Moſely "a "fatal medicine" in the yellow fever. In one of

* Vol. i. p. 440.

† Omnes qui vini potione non abſtinuerunt, interiere, adeo ut ſumma ſpes ſalvationis in vini abſtinentia collocata videreter. Lib. vi. p. 847.

my

my patients who took only fifteen drops of it, without my advice, to eaſe a pain in his bowels, it produced a delirium, and death in a few hours. I was much gratified in diſcovering that my practice, with reſpect to the uſe of opium in this fever, accorded with Dr. Wade's in the fever of Bengal. He tells us that "it was miſchievous in almoſt every inſtance, even in combination with antimonials."

The *ſpices* were hurtful in the firſt ſtage of the fever, and when ſufficient evacuations had been uſed, they were ſeldom neceſſary in its ſecond.

The *elixir of vitriol* was in general offenſive to the ſtomach.

The *cold bath* was uſeful in thoſe caſes where its ſedative prevailed over its ſtimulating effects. But this could not often happen, from the ſuddenneſs and force with which the water was thrown upon the body. In two caſes in which I preſcribed it, it produced a gentle ſweat, but it did not ſave life. In a third it removed a delirium, and reduced the pulſe for a few minutes, in frequency and force, but this patient died. The recommendation of it indiſcriminately in all caſes, was extremely improper. In that chillineſs and

tendency

tendency to fainting upon the leaſt motion, which attended the diſorder in ſome patients, it was an unſafe remedy. I heard of a woman who was ſeized with delirium immediately after uſing it, from which ſhe never recovered; and of a man who died a few minutes after he came out of a bathing tub. Had this remedy been the excluſive antidote to the yellow fever, the mortality of the diſeaſe would have been but little checked by it. Thouſands muſt have periſhed from the want of the means to procure tubs, and of a ſuitable number of attendants to apply the water, and to lift the patient in and out of bed. The reaſon of our citizens ran before the learning of the friends of this remedy, and long before it was abandoned by the phyſicians; it was rejected as uſeleſs, or not attempted, becauſe impracticable, by the good ſenſe of the city. It is to be lamented that the remedy of cold water has ſuffered in its character by the manner in which it was adviſed. In fevers of too much action, it reduces the morbid excitement of the blood-veſſels, provided it be *applied without force*, and for a conſiderable time to the body. It is in the jail-fever, and in the ſecond ſtage of the yellow fever only, in which its ſtimulancy, and tonic powers are proper. Dr Jackſon eſtabliſhes this mode of uſing it, by informing us, that

that when it did ſervice, it "gave vigour and tone" to the ſyſtem*.

The *third* mode of practice which I mentioned in this fever conſiſted of an union of the evacuating, and tonic remedies. The phyſicians who adopted this mode, gave calomel by itſelf in ſmall doſes on the firſt, or ſecond day of the fever, bled once or twice in a ſparing manner, and gave the bark, wine, and laudanum in large quantities upon the firſt appearance of a remiſſion. After they began the uſe of theſe remedies, purging was omitted, or if the bowels were moved, it was only by means of gentle glyſters. This practice I ſhall ſay hereafter was not much more ſucceſsful than that which was recommended by Dr Kuhn and Dr Stevens. It reſembled throwing water and oil at the ſame time upon a fire, in order to extinguiſh it.

The *French* remedies were nitre, and cremor tartar in ſmall doſes, centaury tea, camphor, and ſeveral other warm medicines; ſubacid drinks taken in large quantities, the warm bath, and moderate bleeding.

* Fevers of Jamaica.

After

After what has been ſaid, it muſt be obvious to the reader, that the nitre and cremor tartar in ſmall doſes, could do no good, and that camphor and all cordial medicines muſt have done harm. The diluting ſubacid drinks which the French phyſicians gave in large quantities were uſeful in diluting and blunting the acrimony of the bile, and to this remedy aſſiſted by occaſional bleeding, I aſcribe moſt of the cures which were performed by thoſe phyſicians.

Thoſe few perſons in whom the *warm bath* produced copious and univerſal ſweats recovered, but in nearly all the caſes which came under my notice, it did harm.

I come now to inquire into the comparative ſucceſs of the *four* different modes of practice which have been mentioned.

I have already ſaid that ten out of thirteen whom I treated with bark, wine, and laudanum, and that three out of four, in whom I added the cold bath to theſe remedies, died. Dr. Pennington informed me, that he had loſt all the patients, (ſix in number) to whom he had given the above medicines. Dr. Johnſon aſſured me with great concern, about two weeks before he died, that he

he had not recovered a ſingle patient by them. Whole families were ſwept off, where theſe medicines were uſed. But further, moſt of thoſe perſons who caught the fever in the city, and ſickened in the country, or in the neighbouring towns, and who were treated with tonic remedies, died. There was not a ſingle cure performed by them in New York, where they were uſed with every poſſible advantage. But why do I multiply proofs of their deadly effects? The clamours of hundreds whoſe relations had periſhed by them, and the fears of others, compelled thoſe phyſicians who had been moſt attached to them, to lay them aſide, or to prepare the way for them (as it was called) by purging and bleeding. The bathing tub ſoon ſhared a worſe fate than bark, wine, and laudanum, and long before the diſeaſe diſappeared, it was diſcarded by all the phyſicians in the city.

In anſwer to theſe facts, we have been told that Mr. Hamilton, and his family recovered by the uſe of Dr. Stevens's remedies. I ſhall not ſay of theſe cures, what ſome gentlemen of the faculty who had ſeen but little of the diſeaſe, and who had forgotten that a powerful epidemic baniſhes, or unites with all other diſeaſes, have ſaid of my cures, viz. that they were not of the yellow fever. It was impoſſible for Mr. Hamilton to have had a fever

at that time of any other kind. The neighbourhood in which he lived in the country, was healthy, and he had been daily expoſed at his office in Cheſnut-ſtreet, to the contagion of the prevailing epidemic. The diſeaſe in this caſe was either very light, or Mr. Hamilton owes more to the ſtrength of his conſtitution, and the goodneſs of Heaven, than moſt of the people who recovered from the diſorder. That it was light in all the branches of Mr. Hamilton's family who were infected by him, I infer from this being the caſe in every ſimilar inſtance in which the diſeaſe ſpread in the country.

"Succeſs (ſays Dr. Sydenham) is not a ſufficient proof of the excellency of a method of cure in acute diſeaſes, ſince ſome are recovered by the imprudent procedure of old women; but it is further required, that the diſtemper ſhould be *eaſily cured*, and yield conformably to its *own* nature*," and again ſpeaking of the cure of the new fever of 1685, this incomparable phyſician obſerves, "If it be objected, that this fever frequently yields to a quite contrary method to that which I have laid down, I anſwer, that the cure of a diſeaſe by a method which is attended with ſucceſs only *now* and *then* in a *few* inſtances, differs extremely from

* Vol. ii. p. 254.

that practical method, the efficacy whereof appears both from its recovering *greater numbers*, and all the practical phenomena happening in the cure*."

After what has been said of Mr. Hamilton's cure, it will not be expected that I should say any thing of the three patients mentioned in Dr. Kuhn's letter to the mayor who recovered under the use of Dr. Stevens's remedies. The fourth patient mentioned by Dr. Kuhn, whom he left on the 4th day of the disease with "no unfavourable symptoms" was Dr. Hutchinson. I visited him the day after Dr. Kuhn left him, and found him sitting in a chair near the head of his bed, with all his clothes on, as if he had been in his usual health. A short examination of his case, satisfied me that he was in extreme danger. His face was suffused with blood. He had a full pulse, and a hemorrhage from his gums, which last symptom I was told came on the day before. I pressed him to take a strong mercurial purge, but he refused it. From that moment I despaired of his recovery. He died three days afterwards.

The reader will naturally pause after reviewing these remarks upon the above cures, and ask,

* Vol. ii. p. 354.

whether

whether it was conſiſtent with the rules of juſt and ſafe reaſoning in medicine, to deduce a general and uniform method of treating this diſorder, from the favourable iſſue of only four or five caſes, and whether it was candid, to condemn in the moſt unqualified manner, a contrary mode of practice, after repeated public, and private declarations, that it had at that time, cured ſeveral hundred people.

Far be it from me to deny that indirect debility may not be overcome by ſuch ſtimuli as are more powerful than thoſe which occaſion it. This has ſometimes been demonſtrated by the efficacy of bark, wine, and laudanum, in the confluent and petechial ſmall-pox; but even this ſtate of that diſorder, yields more eaſily to blood-letting, or to plentiful evacuations from the ſtomach and bowels on the firſt or ſecond day of the eruptive fever. This I have often proved, by giving a large doſe of tartar emetic, and calomel, as ſoon as I was ſatisfied from circumſtances, that my patient was infected with the ſmall-pox. But the indirect debility of the yellow fever appears to be much greater than that which occurs in the ſmall-pox, and hence it more uniformly reſiſted the moſt powerful tonic remedies.

I have publicly aſſerted, that the remedies which I adopted, and of which I have given a hiſtory, cured a greater proportion than ninety-nine out of an hundred of all who applied to me on the firſt day of the diſorder before the 15th day of September. I regret that it is not in my power to furniſh a liſt of them, for a majority of them were poor people, whoſe names are ſtill unknown to me. I was not ſingular in this ſucceſsful practice in the firſt appearance of the diſorder. Dr. Pennington aſſured me on his death bed, that he had not loſt one, out of forty-eight patients whom he had treated agreeably to the principles and practice I had recommended. Dr. Griffitts triumphed over the diſeaſe in every part of the city, by the uſe of what were called the new remedies. My former pupils ſpread by their ſucceſs, the reputation of purging, and bleeding, wherever they were called. Unhappily the pleaſure we derived from this ſucceſs in the treatment of the diſorder, was of ſhort duration. Many circumſtances contributed to leſſen it, and to revive the mortality of the fever. I ſhall briefly enumerate them.

1. The diſtraction produced in the public mind, by the recommendation of remedies, the oppoſites in every reſpect of purging and bleeding.

2. The

2. The opinion which had been publiſhed by ſeveral phyſicians, and inculcated by others, that we had other fevers in the city beſides the yellow fever. This produced a delay in many people in ſending for a phyſician, or in taking medicines for two or three days, from a belief that they had nothing but a cold, or a common fever. Some people were ſo much deceived by this opinion, that they refuſed to ſend for phyſicians leſt they ſhould be infected by them, with the yellow fever. In moſt of the caſes in which theſe delays took place, the diſeaſe proved mortal.

To obviate a ſuſpicion, that I have laid more ſtreſs upon the fatal influence of this error than is juſt, I ſhall here inſert an extract of a letter I have lately been favoured with from Mr. John Connelly one of the city committee, who frequently left his brethren in the City Hall, and ſpent many hours in viſiting and preſcribing for the ſick. "The publications (ſays he) of ſome phyſicians that there were but few perſons infected with the yellow fever, and that many were ill with colds and common remitting and fall fevers, proved fatal to almoſt every family which was credulous enough to believe them. That opinion ſlew its hundreds, if not its thouſands, many of whom did not ſend for a phyſician until they were in the laſt

ſtage of the diſorder, and beyond the power of medicine."

3. The interference of the friends of the ſtimulating ſyſtem, in diſſuading patients from ſubmitting to ſufficient evacuations.

4. The deceptions which were practiſed by ſome patients upon their phyſicians in their reports of the quantity of blood they had loſt, or of the quality, and number of their evacuations by ſtool.

5. The impracticability of procuring bleeders as ſoon as bleeding was preſcribed. Life in this diſeaſe, as in the apoplexy, frequently turned upon that operation being performed within an *hour*. It was often delayed from the want of a bleeder, one or two days.

6. The inability of phyſicians, from the number of their patients, and from frequent indiſpoſition, to viſit the ſick, at ſuch times, as was neceſſary to watch the changes in their diſorder.

7. The great accumulation, and concentration of the contagion in ſick rooms from the continuance of the diſeaſe in the city, whereby the ſyſtem

was

was expoſed to a conſtant ſtimulus, and the effect of evacuations was thus defeated.

8. The want of ſkill or fidelity in nurſes to adminiſter the medicines properly, to perſuade patients to drink frequently; alſo to ſupply them with food or cordial drinks when required in the night.

9. The great degrees of indirect debility induced in the ſyſtems of many of the people who were affected by the diſorder, from fatigue in attending their relations or friends.

10. The univerſal depreſſion of mind, amounting in ſome inſtances to deſpair, which affected many people. What medicine could act upon a patient who awoke in the night, and ſaw through the broken and faint light of a candle, no human creature, but a black nurſe, perhaps aſleep in a diſtant corner of the room, and who heard no noiſe, but that of a hearſe conveying, perhaps, a neighbour or friend, to the grave? The ſtate of mind under which many were affected by the diſeaſe, is ſo well deſcribed by the Rev. Dr. Smith in the caſe of his wife, in a letter I received from him in my ſick room, two days after her death, that I hope I ſhall be excuſed for inſerting an

extract from it. It forms a part of the hiſtory of the diſeaſe. The letter was written in anſwer to a ſhort note of condolence which I ſent to the Doctor immediately after hearing of Mrs Smith's death. After ſome pathetic expreſſions of grief, he adds, " The ſcene of her funeral, and ſome preceding circumſtances, can never depart from my mind. On our return from a viſit to our daughter, whom we had been ſtriving to conſole on the death of Mrs. Keppele, who was long familiar, and dear to both, my dear wife paſſing the burying ground gate, led me into the ground, viewed the graves of her two children, called the old grave digger, marked a ſpot for herſelf as cloſe as poſſible to them and the grave of Dr. Phineas Bond, whoſe memory ſhe adored. Then by the ſide of the ſpot ſhe had choſen, we found room and choſe *mine*, pledging ourſelves to each other, and directing the grave-digger that this ſhould be the order of our interment. We returued to our houſe. Night approached. I hoped my dear wife had gone to reſt, as ſhe had choſen ſince her return from nurſing her daughter, to ſleep in a chamber by herſelf, through fear of infecting her grand child and me. But it ſeems ſhe cloſed not her eyes; ſitting with them fixed through her chamber window on Mrs Keppele's houſe, until about midnight ſhe ſaw her herſe and followed it

with

with her eyes as far as it could be ſeen. Two days afterwards Mrs. Rodgers, her next only ſurviving intimate friend, was carried paſt her window, and by no perſuaſion could I draw her from thence, nor ſtop her ſympathetic foreboding tears, ſo long as her eyes could follow the funeral, which was through two ſquares, from Fourth to Second ſtreet, where the herſe diſappeared." The Doctor proceeds in deſcribing the diſtreſs of his wife. But pointed as his expreſſions are, they do not convey the gloomy ſtate of her mind with ſo much force as ſhe has done it herſelf in two letters to her niece Mrs Cadwallader, who was then in the country. The one was dated the 9th, the other the 11th of October. I ſhall inſert a few extracts from each of them, "October 9th; It is not poſſible for me to paſs the ſtreets without walking in a line with the dead. Paſſing infected houſes, and looking into open graves. This has been the caſe for many weeks. I don't know what to write, my head is gone, and my heart is torn to pieces." "I intreat you to have no fears on my account. I am in the hand of a juſt and merciful God, and his will be done."

October 11th: "Don't wonder that I am ſo low to day. My heart is ſunk down within me."

The

The next day this excellent woman ſickened, and died on the 19th of the ſame month.

If in a perſon poſſeſſed naturally of uncommon equanimity, and fortitude, the diſtreſſes of our city, produced ſuch dejection of ſpirits, what muſt have been their effect upon hundreds, who were not endowed with thoſe rare and extraordinary qualities of mind? Death in this, as well as in many other caſes in which medicine had done its duty, appeared to be the inevitable conſequence of the total abſtraction of the energy of the mind in reſtoring the natural motions of life.

Under all the circumſtances which have been mentioned, which oppoſed the ſyſtem of depletion in the cure of this fever, it was ſtill far more ſucceſsful than any other mode of cure that had been purſued before in the United States or in the Weſt Indies.

Three out of four died of the diſorder in Jamaica, under the care of Dr. Hume.

Dr. Blane conſiders it as one of the "moſt mortal" of diſeaſes, and Dr. Jackſon places a more ſucceſsful mode of treating it, among the

ſubjects

ſubjects which will admit of "innovation" in medicine.

After the 15th of September my ſucceſs was much limited, compared with what it had been before that time. But at no period of the diſeaſe did I loſe more than one in twenty of thoſe whom I ſaw on the firſt day, and attended regularly through every ſtage of the fever; provided they had not been previouſly worn down by attending the ſick.

The following ſtatement which will admit of being corrected, if it be inaccurate, will I hope, eſtabliſh the truth of the above aſſertions.

About one half of the families whom I have attended for many years, left the city. Of thoſe who remained, many were affected by the diſorder. Out of the whole of them, after I had adopted my ſecond mode of practice, I loſt only five heads of families, and about a dozen ſervants and children. In no inſtance did I loſe the maſter and miſtreſs of the ſame family. My ſucceſs in theſe caſes was owing to two cauſes; 1ſt, To the credit my former patients gave to my public declaration, that we had only *one* fever in the city; hence they applied

plied on the *firſt* day, and ſometimes on the *firſt* hour of their indiſpoſition; and 2dly, To the numerous pledges many of them had ſeen of the ſafety and efficacy of copious blood-letting by my advice, in other diſeaſes: hence my preſcription of that neceſſary remedy, was always obeyed in its utmoſt extent. Of the few adults whom I loſt, among my former patients, two of them were old people; two took laudanum without my knowledge; and one refuſed to take medicine of any kind; all the reſt had been worn down by previous fatigue.

I have before ſaid that a great number of the blacks were my patients. Of theſe not one died under my care. This uniform ſucceſs among thoſe people, was not owing altogether to the mildneſs of the diſeaſe, for I ſhall ſay preſently, that a great proportion of a given number died under other modes of practice.

In ſpeaking of the comparative effects of purging and bleeding, it may not be amiſs to repeat, that not one pregnant woman to whom I preſcribed them died, or ſuffered abortion. Where the tonic remedies were uſed, abortion or death, and in many inſtances both, were nearly univerſal.

Many

Many whole families, conſiſting of five, ſix, and in three inſtances, of nine members, were recovered by plentiful purging and bleeding. I could ſwell this work by publiſhing a liſt of thoſe families; but I take more pleaſure in adding, that I was not ſingular in my ſucceſs in the uſe of the above remedies. They were preſcribed with great advantage by many of the phyſicians of the city, who had for a while given tonic medicines without effect. I ſhall not mention the names of any of the phyſicians who *totally* renounced thoſe medicines, leſt I ſhould give offence by not mentioning them all. Many large families were cured by ſome of them, after they adopted and preſcribed copious purging and blood-letting. One of them cured ten in the family of Mr Robert Haydock, by means of thoſe remedies. In one of that family, the diſeaſe came on with a vomiting of black bile.

But the uſe of the new remedies was not directed finally by the phyſicians alone. The clergy, the apothecaries, many private citizens, ſeveral intelligent women, and two black men, preſcribed them with great ſucceſs. Nay more, many perſons preſcribed them to themſelves; and as I ſhall ſay hereafter, with a ſucceſs that was unequalled by any of the regular or irregular practitioners in the city.

It

It was owing to the almoſt univerſal uſe of purging and bleeding, that the mortality of the diſeaſe diminiſhed in proportion as the number of perſons who were affected by it, encreaſed about the middle of October. It was ſcarcely double of what it was in the middle of September, and yet ſix times the number of perſons were probably at that time confined by it.

The ſucceſs of copious purging and bleeding was not confined to the city of Philadelphia. Several perſons who caught the diſeaſe in town, and ſickened in the country, were cured by them.

Could a compariſon be made of the number of patients who died of our late fever, after having been plentifully bled and purged, with thoſe who died of the yellow fever in the years 1699, 1741, 1747, and 1762, I am perſuaded that the proportion would be very ſmall in the year 1793, compared with the former years*. Including all who died under every mode of treatment, I ſuſpect the

* It appears from one of Mr Norris's letters, dated the 9th of November, O. S. that there died 220 perſons in the year 1699, with the yellow fever. Between 80 and 90 of them he ſays belonged to the ſociety of Friends. The city at this time probably did not contain more than 2 or 3000 people, many of whom it is probable fled from the diſorder.

mortality

mortality to be leſs in proportion to the population of the city, and the number of perſons who were affected, than it was in any of the other years that have been mentioned.

Not leſs than 6000 of the inhabitants of Philadelphia probably owe their lives to purging and bleeding, during the late autumn.

I proceed with reluctance to inquire into the comparative ſucceſs of the French practice. It would not be difficult to decide upon it from many facts that came under my notice in the city; but I ſhall reſt its merit wholly upon the returns of the number of deaths at Buſh-hill. This hoſpital, after the 22d of September, was put under the care of a French phyſician, who was aſſiſted by one of the phyſicians of the city. The hoſpital was in a pleaſant and airy ſituation; it was provided with all the neceſſaries and comforts for ſick people that humanity could invent, or liberality ſupply. The attendants were devoted to their duty; and cleanlineſs and order pervaded every room in the houſe. The reputation of this hoſpital and of the French phyſician, drew patients to it in the early ſtage of the diſorder. Of this I have been aſſured in a letter from Dr. Annan, who was appointed to examine and give orders of admiſſion

admiſſion into the hoſpital, to ſuch of the poor of the diſtrict of Southwark, as could not be taken care of in their own houſes. Mr. Olden has likewiſe informed me, that moſt of the patients who who were ſent to the hoſpital by the city committee (of which he was a member) were in the firſt ſtage of the fever. With all theſe advantages, the deaths between the 22d of September and the 6th of November, amounted to 448 out of 807 patients who were admitted into the hoſpital within that time. Three fourths of all the blacks (nearly 20) who were patients in this hoſpital died. A liſt of the medicines preſcribed there may be ſeen in the minutes of the proceedings of the city committee. Calomel and jalap are not among them. *Moderate* bleeding and purging with Glauber ſalts, I have been informed, were uſed in ſome caſes by the phyſicians of this hoſpital. The proportion of deaths to the recoveries, as it appears in the minutes of the committee from whence the above report is taken, is truly melancholy! I hurry from it therefore to a part of this work, to which I have looked with pleaſure, ever ſince I ſat down to compoſe it.

I have ſaid that the clergy, the apothecaries, and many other perſons who were uninſtructed in the principles of medicine, preſcribed purging, and

bleeding with great ſucceſs in this diſorder. Neceſſity gave riſe to this undiſciplined ſect of practitioners, for they came forward to ſupply the places of the regular bred phyſicians who were ſick or dead. I ſhall mention the names of a few of thoſe perſons who diſtinguiſhed themſelves as volunteers in this new work of humanity. The late Rev. Mr. Fleming one of the miniſters of the Catholic church, carried the purging powders in his pocket, and gave them to his poor pariſhioners with great ſucceſs. He even became the advocate of the new remedies. In a converſation I had with him on the 22d of September, he informed me, that he had adviſed four of our phyſicians whom he met a day or two before, "to renounce the pride of ſcience, and to adopt the new mode of practice, for that he had witneſſed its good effects in many caſes." Mr. John Keihmle, a German apothecary has aſſured me that out of 314 patients whom he viſited, and 187 for whom he preſcribed from the reports of their friends, he loſt only 47 (which is nearly but one in eleven) and that he treated them all agreeably to the method which I had recommended. The Rev. Mr. Schmidt one of the miniſters of the Lutheran church, was cured by him. I have before mentioned an inſtance of the judgment of Mr. Connelly, and of his zeal in viſiting and preſcribing for the ſick. His remedies were

bleeding and purging. He moreover, bore a conſtant and uſeful teſtimony againſt bark, wine, laudanum, and the warm bath*. Mrs. Paxton in Carter's alley, and Mrs. Evans the wife of Mr. John Evans in Second-ſtreet, were indefatigable; the one in diſtributing mercurial purges compoſed by herſelf, and the other in urging the neceſſity of *copious* bleeding and purging among her friends and neighbours, as the only ſafe remedies for the fever. Theſe worthy women were the means of ſaving many lives†. Abſalom Jones, aud Richard Allen, two black men, ſpent all the intervals of

* In the letter before quoted, from Mr. Connelly, he expreſſes his opinion of thoſe four medicines in the following words. "Laudanum, bark, and wine, have put a period to the exiſtence of ſome, where the fever has been apparently broken, and the patients in a fair way of recovery; a ſingle doſe of laudanum has hurried them ſuddenly into eternity. I have viſited a few patients, where the hot bath was uſed, and am convinced that it only tended to weaken and relax the ſyſtem, without producing any good effect."

† The yellow fever prevailed at the Caraccos in South America in October 1793, with great mortality, more eſpecially among the Spaniſh troops. Nearly all died who were attended by phyſicians. Recourſe was finally had to the old women, who were ſucceſsful in almoſt every caſe to which they were called. Their remedies were a liquor called *narencado* (a ſpecies of lemonade) and a tea made of a root called

time, in which they were not employed in burying the dead, in viſiting the poor who were ſick, and in bleeding and purging them, agreeably to the directions which had been printed in all the news papers. Their ſucceſs was unparalleled by what is called regular practice. This encomium upon the practice of the blacks, will not ſurpriſe the reader when I add, that they had no fear of putrefaction in the fluids, nor of the calumnies of a body of fellow citizens in the republic of medicine, to deter them from plentiful purging and bleeding. They had beſides no more patients, than they were able to viſit two or three times a day. But great as their ſucceſs was, it was exceeded by thoſe perſons who in deſpair of procuring medical aid of any kind, purged and bled themſelves. This palm of ſuperior ſucceſs, will not be withheld from thoſe people, when I explain the cauſes of it. It was owing to their *early* uſe of the proper remedies, and to their being guided in the repetition of them, by the continuance of a tenſe pulſe, or of pain and fever. A day, an af-

called *fiſtula*. With theſe drinks, they drenched their patients for the firſt two or three days. They induced plentiful ſweats, and probably, after blunting, diſcharged the bile from the bowels. I received this information from an American gentleman who had been cured by one of thoſe amazons in medicine, in the above way.

ternoon, and even an hour, were not loſt by theſe people in waiting for the viſit of a phyſician who was often detained from them, by ſickneſs, or by new and unexpected engagements, by which means the precious moment for uſing the remedies with effect, paſſed irrevocably away. I have ſtated theſe facts from faithful inquiries, and numerous obſervations. I could mention the names, and families of many perſons who thus cured themſelves. One perſon only ſhall be mentioned, who has ſhewn by her conduct what reaſon is capable of doing when it is forced to act for itſelf. Mrs. Long, a widow, after having been twice unſucceſsful in her attempts to procure a phyſician, undertook at laſt to cure herſelf. She took ſeveral of the mercurial purges, agreeably to the printed directions, and had herſelf bled *ſeven* times in the courſe of five or ſix days. The indication for repeating the bleeding, was the continuance of the pain in her head. Her recovery was rapid, and complete. The hiſtory of it was communicated to me by herſelf, with great gratitude, in my own houſe, during my ſecond confinement with the fever. To theſe accounts of perſons who cured themſelves in the city, I could add many others, of citizens who ſickened in the country, and who cured themſelves by plentiful bleeding and purging, without the attendance of a phyſician.

From

From a ſhort review of theſe facts, reaſon, and humanity awake from their long repoſe in medicine, and unite in proclaiming, that it is time to take the cure of peſtilential fevers out of the hands of phyſicians, and to place it in the hands of the people. Let not the reader ſtartle at this propoſition. I ſhall give the following reaſons for it.

1. In conſequence of theſe peſtilential fevers affecting a great number of people at one time, it has always been, and always will be impoſſible for them *all* to have the benefit of medical aid, more eſpecially as the proportion of phyſicians to the number of ſick, is generally diminiſhed upon theſe occaſions, by deſertion, ſickneſs and death.

2. The ſafety of committing to the people the cure of peſtilential fevers, particularly the yellow fever and the plague, is eſtabliſhed by the ſimplicity and uniformity of their proximate cauſe, and of their remedies. However diverſified they may be in their ſymptoms, the ſyſtem in both diſeaſes is always under a ſtate of indirect debility, and in all caſes requires the abſtraction of ſtimulus in a greater or leſs degree, or in a ſudden or gradual manner. There can never be any danger of the people injuring themſelves by miſtaking any other diſeaſe for a yellow fever, or plague, for no other

febrile diſorder can prevail with them. It was probably to prevent this miſtake that the Benevolent Father of mankind, who has permitted no evil to exiſt which does not carry its antidote along with it, originally impoſed that law upon all great and mortal epidemics.

3. The hiſtory of the yellow fever in the Weſt Indies, proves the advantage of truſting patients to their own judgment. Dr. Lind has remarked, that a greater proportion of ſailors who had no phyſicians, recovered from that fever, than of thoſe who had the beſt medical aſſiſtance. The freſh air of the deck of a ſhip, a purge of ſalt water, and the free uſe of cold water, probably triumphed here over the cordial juleps of phyſicians.

4. By committing the cure of this and other peſtilential diſeaſes to the people, all thoſe circumſtances which prevented the univerſal ſucceſs of purging, and bleeding in our late epidemic, will have no operation. The fever will be mild in moſt caſes, for all will prepare themſelves to receive it by a vegetable diet, and by moderate evacuations. The remedies will be uſed the *moment* the diſeaſe is felt or even ſeen, and the contagion generated by it, will be feeble and propa-

gated

gated only to a ſmall diſtance from ſuch patients. There will then be no diſputes among phyſicians about the nature of the diſeaſe to diſtract the public mind, for they will ſeldom be conſulted in it. None will ſuffer from chronic debility induced by previous fatigue, in attending the ſick, nor from the want of nurſes, for few will be ſo ill as to require them, and there will be no "foreboding" fears of death or deſpair of recovery, to invite an attack of the diſeaſe, or to enſure its mortality.

The ſmall-pox was once as fatal as the yellow fever and the plague. At preſent, it yields as univerſally to a vegetable diet, and evacuations, in the hands of apothecaries, the clergy, and even of the good women, as it does in the hands of Doctors of phyſic.

They have narrow conceptions, not only of the divine goodneſs, but of the gradual progreſs of human knowledge, who ſuppoſe that all peſtilential diſeaſes ſhall not, like the ſmall-pox, ſooner or later ceaſe to be the ſcourge and terror of mankind.

For a long while, air, water, and even the light of the ſun, were dealt out by phyſicians to their patients with a ſparing hand. They poſſeſſed for ſeveral centuries the ſame monopoly of many artificial

remedies. But a new order of things is riſing in medicine, as well as in government. Air, water, and light are taken without the advice of a phyſician, and bark and laudanum are now preſcribed every where by nurſes, and miſtreſſes of families, with ſafety and advantage. Human reaſon cannot be ſtationary upon theſe ſubjects. The time muſt, and will come, when in addition to the above remedies, the general uſe of calomel, jalap, and the lancet, ſhall be conſidered among the moſt eſſential articles of the knowledge, and rights of man.

It is no more neceſſary, that a patient ſhould be ignorant of the medicine he takes to be cured by it, than that the buſineſs of government ſhould be conducted with ſecrecy, in order to enſure obedience to juſt laws. Much leſs is it neceſſary that the means of life ſhould be preſcribed in a dead language, or dictated with the ſolemn pomp of a necromancer. The effects of impoſture in every thing are like the artificial health produced by the uſe of ardent ſpirits. Its vigour is temporary, and is always followed by miſery and death.

The belief that the yellow fever and the plague are neceſſarily mortal, is as much the effect of a ſuperſtitious torpor in the underſtanding, as the ancient belief, that the epilepſy was a ſupernatural diſeaſe, and that it was an offence againſt heaven

to attempt to cure it. It is partly from the influence of this torpor in the minds of ſome people, that the numerous cures of the yellow fever performed by a few ſimple remedies, were ſaid to be of *other* diſeaſes. It is neceſſary, for the conviction of ſuch perſons, that patients ſhould always *die* of that, and other dangerous diſorders, to prove that they have been affected by them.

The repairs which our world is undergoing, as far as they relate to the melioration of the condition of man, will be incomplete, until peſtilential fevers ceaſe to be numbered among the wideſt outlets of human life.

There are many things which are now familiar to women and children, which were known a century ago, only to a few men who lived in cloſets, and were diſtinguiſhed by the name of philoſophers.

We teach an hundred things in our ſchools leſs uſeful, and many things more difficult, than the knowledge that would be neceſſary to cure a yellow fever or the plague.

In my attempts to teach the citizens of Philadelphia by my different publications, the method of

of curing themſelves of our late fever, I obſerved no difficulty in their apprehending every thing that was addreſſed to them, except what related to the different ſtates of the pulſe. All the knowledge that is neceſſary to diſcover when bloodletting is proper, might be taught to a boy or girl of twelve years old in a few hours. I taught it in leſs time to ſeveral perſons during the prevalence of our late epidemic.

I would as ſoon believe that ratifia was intended by the Author of Nature, to be the only drink of man, inſtead of water, as believe that the knowledge of what relates to the health and lives of a *whole* city, or nation, ſhould be confined to one, and that a ſmall or a privileged order of men.—But what have phyſicians, what have univerſities, or medical ſocieties done after the labours, and ſtudies of many centuries towards leſſening the mortality of peſtilential fevers? They have either copied, or contradicted each other, in all their publications. Plagues and malignant fevers, are ſtill leagued with war and famine, in their ravages upon human life.

Botallus in France, and Dr. Sydenham in England, it is true, long ago uſed the proper remedies for thoſe diſorders with univerſal ſucceſs; but they

they were unable to introduce them into general practice. The reaſon is obvious: They recommended them in their writings only to phyſicians. At the expence of an immenſe load of obloquy, I have addreſſed my publications to the people. The appeal though hazardous, in the preſent ſtate of general knowledge in medicine, has ſucceeded. The citizens of Philadelphia are delivered from their fears of copious evacuations, of cold air, and cold water, and above all, of a ſore mouth from mercury, in the cure of the yellow fever; and the pride and formalities of medicine, as far as they relate to this diſeaſe, are now as completely diſcarded in our city, as the deceptions of witchcraft were, above a century ago.

To prevent the propagation and mortality of this fever, it will be neceſſary when it makes its appearance in a city or country, to publiſh an account of thoſe ſymptoms which I have called the *precurſors* of the diſeaſe, and to exhort the people as ſoon as they feel thoſe ſymptoms, to have immediate recourſe to the remedies of purging or bleeding. The danger of delay in uſing one, or both thoſe remedies, ſhould be inculcated in the ſtrongeſt terms, for the diſeaſe, like Time, has a lock on its forehead, but is bald behind. The bite of a rattle-ſnake is ſeldom fatal, becauſe the

medicines

medicines which cure it, are applied, or taken, as ſoon as the poiſon comes in contact with the blood. There is leſs danger to be apprehended from the contagion of the yellow fever in the ſyſtem than from the poiſon of the ſnake, provided the remedies for it, are adminiſtered within a few hours after it is excited into action.

Let perſons who are ſubject to chronic pains, or diſeaſes of any kind, be adviſed not to be deceived by them. Every pain at ſuch a time, is the beginning of the diſeaſe; for the contagion I have ſaid, always acts firſt on debilitated parts of the body. From an ignorance of the law of epidemics many perſons by delaying their applications for help, periſhed with our late fever.

Let nature be truſted in no caſe whatever, to cure this diſeaſe, and let no attack of it, however light, be treated with neglect. Death as certainly performs his work, when he ſteals on the ſyſtem in the form of a mild intermittent, as he does, when he comes on with the ſymptoms of apoplexy, or a black vomiting.

Cleanlineſs in houſes and dreſs, cannot be too often inculcated during the prevalence of a yellow fever.

Laſtly,

Laſtly, Let thoſe who are in health be directed to prepare their bodies by means of a low diet, for the reception of the diſeaſe in the manner that has been formerly mentioned; let pleaſure, and even labour, where it expoſes men to the heat of the ſun, or of a culinary fire, be every where ſuſpended. Thus, while the ſyſtem is prepared to bend like the willow, the contagion of the fever will paſs over it, without doing any harm.

Let it not be ſuppoſed, that I mean, that the hiſtory which I have given of the method of cure of our late epidemic, ſhould be applied in all its parts, to the yellow fevers which may appear hereafter in the United States, or which exiſt at all times in the Weſt India iſlands. Seaſon and climate vary this, as well as all other diſeaſes. Bark and wine, ſo fatal in our late, may be proper in a future yellow fever. But without the fear of being refuted, I will notwithſtanding aſſert, that the proper remedies for this fever at all times, and in all places in its *firſt* ſtage, *muſt be* evacuations. The only inquiry, when the diſeaſe makes its appearance, ſhould be, from what part of the body theſe evacuations ſhould be procured; the order which ſhould be purſued in obtaining them, and the quantity of each of the matters to be

be diſcharged, which ſhould be withdrawn at a time.

Thus far did I venture from my theory of the diſeaſe, and from the authorities of Dr. Hillary and Dr. Moſely, to decide in favour of evacuations in the yellow fever in hot climates; but Dr. Wade, and Mr. Chiſholm again ſupport me by their practice in the fevers of the Eaſt and Weſt Indies. They both gave ſtrong mercurial purges, and bled in ſome caſes. Dr. Wade confirmed by his practice, the advantage, of *gradually* abſtracting ſtimulus from the ſyſtem. He never drew blood even in the moſt inflammatory caſes, until he had firſt diſcharged the contents of the bowels. The Doctor has further eſtabliſhed the efficacy of a vegetable diet, and of water as a drink, as the beſt means of preventing the diſorder in a hot climate.

The manner in which the contagion of the plague acts upon the ſyſtem, is ſo much like that which has been deſcribed in the yellow fever, and the accounts of the efficacy of low diet in preparing the body for its reception, and of copious bleeding, cold air and cold water, in curing it, are ſo ſimilar, that all the directions which relate

to

to preventing, mitigating, or curing the yellow fever, may be applied to it. The fluids in the plague ſhew a greater tendency to the ſkin, than they do, in the yellow fever. Perhaps upon this account, the early uſe of powerful ſudorifics may be more proper in the former, than in the latter diſorder. From the influence of early purging, and bleeding in promoting ſweat in the yellow fever, there can be little doubt, but the efforts of nature to unload the ſyſtem in the plague through the channel of the pores, might be accelerated by the early uſe of the ſame remdies. One thing with reſpect to the plague is certain; that its cure depends upon the abſtraction of ſtimulus, either by means of plentiful ſweats, or of purulent matter from external ſores. Perhaps the efficacy of theſe remedies depends wholly upon their diminiſhing the indirect debility of the ſyſtem in a *gradual* manner. If this be the caſe, thoſe natural diſcharges might be eaſily and effectually imitated by ſmall and repeated bleedings.

To correſpond in quantity with the diſcharge from the ſkin, blood-letting in the plague ſhould be copious. A profuſe ſweat continued for twenty four hours, cannot fail of waſting many pounds of the fluids of the body. This was the duration

of

of the critical ſweats in the famous plague which was known by the name of the Engliſh ſweating ſickneſs, and which made its appearance in the army of Henry VII. in Milford-Haven in Wales, and ſpread from thence through every part of the kingdom.

The principles which lead to the prevention and cure of the yellow fever and the plague, apply with equal force to the mitigation of the meaſles, and to the prevention or mitigation of the ſcarlatina anginoſa, the dyſentery, and the jail or hoſpital fever. I have remarked in a former publication*, that a previous vegetable diet leſſened the violence and danger of the meaſles. Dr. Sims taught me ſeveral years ago, to prevent or mitigate the ſcarlatina anginoſa, by means of gentle purges after Children are infected by it†. Purges of ſalts have in many inſtances preſerved whole families and neighbourhoods from the dyſentery where they have been expoſed to the contagion. During the late American war, an emetic ſeldom failed of preventing an attack of the hoſpital fever, when given in its forming ſtate‡. I have had no experience of the

* Medical Inquiries and Obſervations, vol. ii. page 244.

† Medical Memoirs, vol. i.

‡ Medical Inquiries and Obſervations. vol. i. page 211.

effects of previous evacuations in abating the violence, or preventing the mortality of the malignant ſore throat, but I can have no doubt of their efficacy from the ſameneſs of the ſtate of the ſyſtem in that diſorder, as in other malignant fevers. The debility induced in it, is of the indirect kind, and the ſuppoſed ſymptoms of putrefaction, are nothing but the diſguiſed effects of a ſudden and violent preſſure of an inflammatory ſtimulus upon the arterial ſyſtem.

With theſe obſervations I cloſe the hiſtory of the riſe, progreſs, ſymptoms, and treatment of the bilious remitting yellow fever which lately appeared in Philadelphia. My principal aim has been to revive, and apply to it, the principles, and practice of Dr. Sydenham, and however coldly thoſe principles, and that practice may be received by ſome phyſicians of the preſent day, I am ſatiſfied that experience in all ages, and in all countries, will vouch for their truth and utility.

NARRATIVES of eſcapes from great dangers of ſhipwreck, war, captivity, and famine, have always formed an intereſting part of the hiſtory of the body, and mind of man. But there are deliverances from equal dangers, which have hitherto paſſed unnoticed, I mean, from peſtilential fevers. I ſhall briefly deſcribe the ſtate of my body and mind, during my intercourſe with the ſick in our late epidemic. The account will throw additional light upon the diſorder, and probably illuſtrate ſome of the laws of the animal economy. It will moreover ſerve to furniſh a leſſon to all who may be placed in ſimilar circumſtances, to commit their lives without fear, to the protection of that BEING who is able to ſave to the uttermoſt, not only from future but from preſent evil.

Some time before the fever made its appearance, my wife and children went into the ſtate of New-Jerſey where they had long been in the habit of ſpending the ſummer months. My family about the

the 25th of Auguſt, conſiſted of my mother, a ſiſter who was on a viſit to me, a black ſervant man, and a mulatto boy. I had five pupils, viz. Warner Waſhington, and Edward Fiſher, of Virginia, John Alſton of South Carolina, and John Redman Coxe (grandſon to Dr. Redman) and John Stall both of this city. They all crouded around me upon the ſudden encreaſe of buſineſs, and with one heart devoted themſelves to my ſervice, and to the cauſe of humanity.

The credit which the new mode of treating the diſeaſe acquired in all parts of the city, produced an immenſe influx of patients to me from all quarters. My pupils were conſtantly employed; at firſt in putting up purging powders, but after a while, only in bleeding and viſiting the ſick.

Between the eighth and the 15th of September I viſited and preſcribed for between an hundred and an hundred and twenty patients a day. Several of my pupils viſited a fourth or fifth part of that number. For a while we refuſed no calls. In the ſhort intervals of buſineſs which I ſpent at my meals, my houſe was filled with patients, chiefly the poor, waiting for advice. For many weeks I ſeldom ate without preſcribing for numbers as I ſat at my table. To aſſiſt me at theſe hours, as well

well as in the night, Mr. Stall, Mr. Fiſher and Mr. Coxe, accepted of rooms in my houſe, and became members of my family. Their labours now had no remiſſion.

Immediately after I adopted the antiphlogiſtic mode of treating the diſorder, I altered my manner of living. I left off drinking wine and malt liquors. The good effects of the diſuſe of theſe liquors, helped to confirm me in the theory I had adopted of the diſeaſe. A troubleſome head-ach, which I had occaſionally felt, and which excited a conſtant apprehenſion that I was taking the fever, now ſuddenly left me. I likewiſe at this time left off eating ſolid animal food, and lived wholly, but ſparingly, upon weak broth, potatoes, raiſins, coffee, and bread and butter.

From my great intercourſe with the ſick, my body became highly impregnated with the contagion. My eyes were yellow, and ſometimes a yellowneſs was perceptible in my face. My pulſe was preternaturally quick, and I had profuſe ſweats every night. Theſe ſweats were ſo offenſive as to oblige me to draw the bed-cloths cloſe to my neck to defend myſelf from their ſmell. They loſt their fœtor entirely upon my leaving

off the uſe of broth, and living intirely upon milk and vegetables. But my nights were rendered diſagreeable, not only by theſe ſweats, but by the want of my uſual ſleep, produced in part by the frequent knocking at my door, and in part by anxiety of mind, and the ſtimulus of the contagion upon the ſyſtem. I lay down in conformity to habit only, for my bed ceaſed to afford me reſt or refreſhment. When it was evening, I wiſhed for morning; and when it was morning, the proſpect of the labours of the day, cauſed me to wiſh for the return of evening. The degrees of my anxiety may be eaſily conceived, when I add, that I had at one time upwards of thirty heads of families under my care: among theſe were Mr. Joſiah Coates, the father of eight, and Mr. Benjamin Scull, and Mr. John Morrell, each fathers of ten children. They were all in imminent danger; but it pleaſed God to make me the inſtrument of ſaving each of their lives. I roſe at 6 o'clock, and generally found a number of perſons waiting for advice in my ſhop or parlour. Hitherto the ſucceſs of my practice gave a tone to my mind, which imparted preternatural vigour to my body. It was meat and drink to me to fulfil the duties I owed to my fellow citizens in this time of great and univerſal diſtreſs. From a hope

that

that I might eſcape the diſeaſe, by avoiding every thing that could excite the contagion in my body into action, I carefully avoided the heat of the ſun, and the coldneſs of the evening air. I likewiſe avoided yielding to every thing that ſhould raiſe or depreſs my paſſions. But at ſuch a time, the events which influence the ſtate of the body and mind are no more under our command, than the winds or weather. On the evening of the 14th of September, after eight o'clock, I viſited the ſon of Mrs. Berriman, near the Swedes church, who had ſent for me early in the morning. I found him very ill. He had been bled in the forenoon by my advice, but his pulſe indicated a ſecond bleeding. It would have been difficult to procure a bleeder at that late hour. I therefore bled him myſelf. From hanging over his breath and blood for ten minutes, and afterwards riding home in the night air, debilitated as I was by the labours of the day, I found myſelf much indiſpoſed the enſuing night. I roſe notwithſtanding at my uſual hour. At 8 o'clock I loſt ten ounces of blood, and immediately afterwards got into my chair, and viſited between forty and fifty patients before dinner. At the houſe of one of them, I was forced to lie down a few minutes. In the courſe of this morning's labours, my mind was ſuddenly thrown off its pivots, by

the laſt look, and the pathetic cries of a friend for *help*, who was dying under the care of a French phyſician. I came home about two o'clock, and was ſeized immediately afterwards with a chilly fit and a high fever. I took a doſe of the mercurial medicine, and went to bed. In the evening I took a ſecond purging powder, and loſt ten ounces more of blood. The next morning I bathed my face, hands, and feet in cold water for ſome time. I drank plentifully during the day and night, of weak hyſon tea, and of water, in which currant jelly had been diſſolved. At 8 o'clock I was ſo well as to admit perſons who came for advice into my room, and to receive reports from my pupils of the ſtate of as many of my patients as they were able to viſit; for unfortunately they were not able to viſit them all (with their own) in due time; by which means ſeveral died. The next day I came down ſtairs, and preſcribed in my parlour for not leſs than an hundred people. On the 19th of the ſame month, I reſumed my labours, but in great weakneſs. It was with difficulty that I aſcended a pair of ſtairs, by the help of a baniſter. A ſlow fever, attended with irregular chills, and a troubleſome cough, hung conſtantly upon me. The fever diſcovered itſelf in the heat of my hands, which my patients often told me were warmer than their own. The contagion

tagion now began to affect me in ſmall and infected rooms, in the moſt ſenſible manner. On the morning of the 4th of October I ſuddenly ſunk down in a ſick room upon a bed, with a giddineſs in my head. It continued for a few minutes, and was ſucceeded by a fever which confined me to my houſe the remaining part of the day.

Every moment in the intervals of my viſits to the ſick, was employed in preſcribing in my own houſe for the poor, or in ſending anſwers to meſſages from my patients; time was now too precious to be ſpent in counting the number of perſons who called upon me for advice. From circumſtances, I believe it was frequently 150, and ſeldom leſs than 50 in a day, for five or ſix weeks, The evening did not bring with it the leaſt relaxation from my labours. I received letters every day from the country, and from diſtant parts of the Union, containing inquiries into the mode of treating the diſorder, and after the health and lives of perſons who had remained in the city. The buſineſs of every evening was to anſwer theſe letters, alſo to write to my family. Theſe employments by affording a freſh current to my thoughts, kept me from dwelling on the gloomy ſcenes of the day. After theſe duties were performed, I copied into my note book all the obſervations

vations I had collected during the day, and which I had marked with a pencil in my pocket book in ſick rooms, or in my carriage. To theſe conſtant labours of body and mind were added *diſtreſſes*, from a variety of cauſes. Having found myſelf unable to comply with the numerous applications that were made to me, I was obliged to refuſe many, every day. My ſiſter counted forty ſeven in one forenoon before 11 o'clock. Many of them left my door with tears, but they did not feel more diſtreſs than I did, from refuſing to follow them. Sympathy when it vents itſelf in acts of humanity, affords pleaſure, and contributes to health, but the reflux of pity, like anger, gives pain, and diſorders the body. In riding through the ſtreets, I was often forced to reſiſt the entreaties of parents imploring a viſit to their children, or of children to their parents. I recollect, and even yet, I recollect with pain, that I tore myſelf at one time from five perſons in Moravian-alley who attempted to ſtop me; by ſuddenly whipping my horſe, and driving my chair as ſpeedily as poſſible beyond the reach of their cries.

The ſolicitude of the friends of the ſick for help, may further be conceived of, when I add, that the moſt extravagant compenſations were ſometimes offered for medical ſervices, and in one inſtance,

inſtance, for only a ſingle viſit. I had no merit in refuſing theſe offers, and I have introduced an account of them only to inform ſuch phyſicians as may hereafter be thrown into a ſimilar ſituation, that I was favoured with an exemption from the fear of death, in proportion as I ſubdued every ſelfiſh feeling, and laboured excluſively for the benefit of others. In every inſtance in which I was forced to refuſe theſe pathetic and earneſt applications, my diſtreſs was heightened by the fear, that the perſons whom I was unable to viſit, would fall into improper hands, and periſh by the uſe of bark, wine, and laudanum.

But I had other afflictions beſides the diſtreſs which aroſe from the abortive ſympathy which I have deſcribed. On the 11th of September, my ingenious pupil Mr Waſhington, fell a victim to his humanity. He had taken lodgings in the country, where he ſickened with the diſorder. Having been almoſt uniformly ſucceſsful in curing others, he made light of his fever, and concealed the knowledge of his danger from me, until the day before he died. On the 18th of September Mr Stall ſickened in my houſe. A delirium attended his fever from the firſt hour it affected him. He refuſed, and even reſiſted force when uſed to compel him to take medicine. He died on the 23d of

of September*. Scarcely had I recovered from the ſhock of the death of this amiable youth, when I was called to weep for a third pupil, Mr. Alſton, who died in my neighbourhood, the next day. He had worn himſelf down before his ſickneſs, by uncommon exertions in viſiting, bleeding, and even ſitting up with ſick people. At this time Mr. Fiſher was ill in my houſe. On the 26th of the month at 12 o'clock, Mr Coxe my only aſſiſtant was ſeized with the fever, and went to his grand father's.

* This accompliſhed youth had made great attainments in his profeſſion. He poſſeſſed with an uncommon genius for ſcience, talents for muſic, painting and poetry. The following copy of an unfiniſhed letter to his father (who had left the city) was found among his papers, after his death. It ſhews that the qualities of his heart were equal to thoſe of his head.

Philadelphia, September 15, 1793.

" My Dear Father,

" I take every moment I have to ſpare to write to you, which is not many, but you muſt excuſe me as I am doing good to my fellow creatures. At this time every moment I ſpend in idleneſs, might probably coſt a life. The ſickneſs encreaſes every day, but moſt of thoſe who die, die for want of good attendance. We cure all we are called to on the firſt day, who are well attended, but ſo many Doctors are ſick, the poor creatures are glad to get a Doctor's ſervant."

I fol-

I followed him with a look which I feared would be the laſt, in my houſe. At two o'clock my ſiſter who had complained for ſeveral days, yielded to the diſorder, and retired to her bed. My mother followed her, much indiſpoſed, early in the evening. My black ſervant man had been confined with the fever for ſeveral days, and had on that day for the firſt time quitted his bed. My little mulatto boy of eleven years old, was the only perſon in my family who was able to afford me the leaſt aſſiſtance. At 8 o'clock in the evening, I finiſhed the buſineſs of the day. A ſolemn ſtillneſs at that time pervaded the ſtreets. In vain did I ſtrive to forget my melancholy ſituation by anſwering letters, and by putting up medicines to be diſtributed next day among my patients. My faithful black man crept to my door, and at my requeſt ſat down by the fire, but he added by his ſilence and dullneſs, to the gloom which ſuddenly overpowered every faculty of my mind.

On the firſt day of October at 2 o'clock in the afternoon, my ſiſter died. I got into my carriage within an hour after ſhe expired, and ſpent the afternoon in viſiting my patients. According as a ſenſe of duty, or as grief has predominated in my mind, I have approved and diſapproved of this act, ever ſince. She had borne a ſhare in my labours.

bours. She had been my nurſe in ſickneſs, and my caſuiſt in my choice of duties. My whole heart repoſed itſelf in her friendſhip. Upon being invited to a friend's houſe in the country, when the diſeaſe made its appearance in the city, ſhe declined accepting the invitation, and gave as a reaſon for ſo doing, that I might probably require her ſervices in caſe of my taking the diſorder, and that if ſhe were ſure of dying, ſhe would remain with me, provided that by her death ſhe could ſave my life. From this time I declined in health and ſtrength. All motion became painful to me. My appetite began to fail. My night ſweats continued. My ſhort and imperfect ſleep was diſturbed by diſtreſſing, or frightful dreams. The ſcenes of them were derived altogether from ſick rooms, and grave yards. I concealed my ſorrows as much as poſſible from my patients, but when alone, the retroſpect of what was paſt, and the proſpect of what was before me, the termination of which was inviſible, often filled my ſoul with the moſt poignant anguiſh. I wept frequently when retired from the public eye, but I did not weep over the loſt members of my family alone. I beheld or heard every day of the deaths of citizens uſeful in public, or amiable in private life. It was my misfortune to loſe as patients, the Rev. Mr. Fleming and Mr. Graeſel, both exhauſted by their

labours

labours of piety and love among the poor, before they ſickened with the diſorder. I ſaw the laſt ſtruggles of departing life in Mr. Powel, and deplored in his death, an upright and faithful ſervant of the public as well as a ſincere and affectionate friend. Often did I mourn over perſons who had by the moſt unparalleled exertions, ſaved their friends and families from the grave, at the expence of their own lives. Many of theſe martyrs to humanity, were in humble ſtations. Among the members of my profeſſion with whom I had been moſt intimately connected, I had daily cauſe of grief and diſtreſs. I ſaw the great and expanded mind of Dr. Pennington, ſhattered by delirium juſt before he died. He was to me dear and beloved, like a younger brother. He was moreover a Joab in the conteſt with the diſeaſe. Philadelphia muſt long deplore the premature death of this excellent phyſician. Had he lived a few years longer, he would have filled an immenſe ſpace in the republic of medicine *. It was my affliction to ſee my friend Dr. John Morris breathe his laſt, and

* Before he finiſhed his ſtudies in medicine, he publiſhed a volume of ingenious and patriotic "Chemical and Œconomical Eſſays, deſigned to illuſtrate the connection between the theory and practice of chemiſtry, and the application of that ſcience to ſome of the arts and manufactures of the United States of America."

to hear the firſt effuſions of the moſt pathetic grief from his mother, as ſhe burſted from the room in which he died. But I had diſtreſs from the ſickneſs, as well as the deaths of my brethren in phyſic. My worthy friends, Dr. Griffitts, Dr. Say, and Dr. Meaſe, were ſuſpended by a thread over the grave nearly at the ſame time. Heaven in mercy to me, as well as in kindneſs to the public, and their friends, preſerved their lives. Had they died, the meaſure of my ſorrows would have been complete.

I have ſaid before, that I early left off drinking wine; but I uſed it in another way. I carried a ittle wine in a vial in my pocket, and when I felt myſelf fainty, after coming out of a ſick room, or after a long ride, I kept about a ſpoonful of it in my mouth for half a minute, or longer, without ſwallowing it. So weak and excitable was my ſyſtem, that this ſmall quantity of wine refreſhed and invigorated me as much as half a pint would have done at any other time. The only difference was, that the vigour I derived from the wine in the former, was of ſhorter duration than when taken in the latter way.

For the firſt two weeks after I viſited patients in the yellow fever, I carried a rag wetted with

vinegar, and ſmelled it occaſionally in ſick rooms: but after I ſaw and felt the ſigns of the univerſal preſence of the contagion in my ſyſtem, I laid aſide this, and all other precautions. I reſted myſelf on the bedſide of my patients, and I drank milk, or eat fruit in their ſick-rooms. Beſides being ſaturated with the contagion, I had another ſecurity againſt being infected by my patients, and that was, I went into ſcarcely a houſe which was more infected than my own. Moſt of the people who called upon me for advice, left a portion of contagion behind them. Four perſons died next door to me on the eaſt; three a few doors above me on the weſt; and five in a ſmall frame houſe on the oppoſite ſide of the ſtreet, towards the ſouth. On the north ſide, and about 150 feet from my houſe, the fever prevailed with great malignity in the family of Mr. James Creſſon. But this was not all. Many of the poor people who called upon me for advice, were bled by my pupils in my ſhop, and in the yard, which was between it, and the ſtreet. From the want of a ſufficient number of bowls to receive their blood, it was ſometimes ſuffered to flow and putrify upon the ground. From all theſe ſources, ſtreams of contagion were conſtantly poured into my houſe, and conveyed into my body by the air, and in my aliment. Thus charged with the fuel

of death, I was frequently diſpoſed to ſay with Job, and almoſt without a figure, to "corruption, thou art my father; and to the worm, thou art my mother and my ſiſter."

The deaths of my pupils and ſiſter have often been urged as objections to my mode of treating the fever. Had the ſame degrees of labour and fatigue which preceded the attack of the yellow fever in each of them, preceded an attack of a common pleuriſy, I think it probable that ſome, or perhaps all of them, would have died with it. But when the influence of the concentrated contagion which filled my houſe, was added to that of conſtant fatigue upon their bodies, what remedies could be expected to ſave their lives? Under the above circumſtances, I conſider the recovery of the other branches of my family from the fever (and none of them eſcaped it) with emotions, ſuch as I ſhould feel, had we all been revived from apparent death, by the exertions of a humane ſociety.

In getting haſtily out of my carriage about the 22d of September, I wounded one of my fingers with a ſmall nail. As my hands were conſtantly expoſed to the contagion of the fever in feeling pulſes, I had this wound carefully wrapped up, from

from an apprehenſion that the contagion when received directly into the blood, might more certainly excite the fever, than when received in the ordinary way. In the hurry of buſineſs, the rag dropped off my finger without my noticing it. The wound inflamed, but healed notwithſtanding in a few days, and I found no inconvenience from it.

The iſſue of this accident was highly ſatisfactory to me, as it eſtabliſhed the analogy between the ſmall-pox and yellow fever, and confirmed me in the propriety of preparing the body for the reception of the latter, by the ſame regimen, as for the former diſorder.

For upwards of ſix weeks I did not taſte animal food, nor fermented liquors of any kind. The quantity of aliment which I took incluſive of drinks, during this time, was frequently not more than one or two pounds in a day. Yet upon this diet, I poſſeſſed for a while uncommon activity of body. This influence of abſtinence upon bodily exertion, has been happily illuſtrated by Dr. Jackſon in his directions for preſerving the health of ſoldiers in hot climates. He tells us, that he walked an hundred miles in three days in Jamaica, during which time he breakfaſted on tea, ſupped on bread and ſallad, and drank nothing

but lemonade or water. He adds further, that he walked from Edinburgh to London in eleven days and an half, and that he travelled with the moſt eaſe when he only breakfaſted and ſupped, and drank nothing but water. The fatigue of riding on horſeback, is prevented or leſſened by abſtinence from ſolid food. Even the horſe ſuffers leaſt from a quick and long journey, when he is fed ſparingly with hay. Theſe facts add weight to the arguments formerly adduced, in favour of a vegetable diet in preventing or mitigating the action of the contagion of malignant fevers upon the ſyſtem. In both caſes the abſtraction of ſtimulus, removes the body further from the reach of indirect debility.

Food ſupports life as much by its ſtimulus, as by affording nouriſhment to the body. Where an artificial ſtimulus acts upon the ſyſtem, the natural ſtimulus of food ceaſes to be neceſſary. Under the influence of this principle, I increaſed, or diminiſhed my food with the ſigns I diſcovered of the increaſe, or diminution of the contagion in my body. Until the 15th of September I drank weak coffee, but after that time, I drank nothing but milk, or milk and water in the intervals of my meals. I was ſo ſatisfied of the efficacy of this mode of living, that I believed life

might

might have been preſerved, and a fever prevented, for many days with a much greater accumulation of the contagion in my ſyſtem, by means of a total abſtinence from food. Poiſon is a relative term, and an exceſs in quantity, or a derangement in place, is neceſſary to its producing deleterious effects. The contagion of the yellow fever produced ſickneſs and death, only from the exceſs of its quantity, or from its force being increaſed by the addition of thoſe other ſtimuli which I have elſewhere called exciting cauſes.

In addition to low diet, as a preventive of the diſorder, I obviated coſtiveneſs by taking occaſionally a calomel pill, or by chewing rhubarb.

I had read, and taught in my lectures, that faſting encreaſes acuteneſs in the ſenſe of touch. My low living had that effect in a certain degree upon my fingers. I had a quickneſs in my perception, of the ſtate of the pulſe in the yellow fever, that I had never experienced before in any other diſorder. My abſtemious diet, aſſiſted perhaps by the ſtate of my feelings, had likewiſe an influence upon my mind. Its operations were performed with an eaſe, and a celerity, which rendered my numerous, and complicated duties, much leſs burdenſome, than they would probably

have been under other circumſtances of diet, or a leſs agitated ſtate of my paſſions.

My perception of the lapſe of time was new to me. It was uncommonly ſlow. The ordinary buſineſs and purſuits of men appeared to me in a light that was equally new. The herſe and the grave mingled themſelves with every view I took of human affairs. Under theſe impreſſions I recollect being as much ſtruck with obſerving a number of men employed in digging the cellar of a large houſe, as I ſhould have been at any other time, in ſeeing preparations for building a palace upon a cake of ice. I recollect further, being ſtruck with ſurpriſe about the 1ſt of October, in ſeeing a man buſily employed in laying in wood for the approaching winter. I ſhould as ſoon have thought of making proviſion for a dinner on the firſt day of the year 1800.

In the account of my diſtreſſes, I have paſſed over the ſlanders which were propagated againſt me by ſome of my brethren. I have mentioned them only for the ſake of declaring in this public manner, that I moſt heartily forgive them; and that if I diſcovered at any time, an undue ſenſe of the unkindneſs and cruelty of thoſe ſlanders, it was not becauſe I felt myſelf injured by them, but

becauſe

becauſe I was ſure they would irreparably injure my fellow citizens, by leſſening their confidence in the only remedies that I believed to be effectual in the reigning epidemic. One thing in my conduct towards theſe gentlemen may require juſtification; and that is, my refuſing to conſult with them. A Mahometan and a Jew might as well attempt to worſhip the Supreme Being in the ſame temple, and through the medium of the ſame ceremonies, as two phyſicians of oppoſite principles and practice, attempt to confer about the life of the ſame patients. What is done in conſequence of ſuch negociations (for they are not conſultations) is the ineffectual reſult of neutraliſed opinions; and wherever they take place, would be conſidered as the effect of a criminal compact between phyſicians, to aſſeſs the property of their patients, by a ſhameful proſtitution of the dictates of their conſciences. Beſides, I early diſcovered that it was impoſſible for me by any reaſonings, to change the practice of ſome of my brethren. Humanity was therefore on the ſide of leaving them to themſelves; for the extremity of *wrong* in medicine, as in morals and government, is often a leſs miſchief, than that mixture of *right* and *wrong* which ſerves by palliating, to perpetuate evil.

After

After the loſs of my health, I received letters from my friends in the country, preſſing me in the ſtrongeſt terms to leave the city. Such a ſtep had become impracticable. My aged mother was too infirm to be removed, and I could not leave her. I was moreover, part of a little circle of phyſicians, who had aſſociated themſelves in ſupport of the new remedies. This circle would have been broken by my quitting the city. The weather varied the diſeaſe, and in the weakeſt ſtate of my body, I expected to be able from the reports of my pupils, to aſſiſt my aſſociates in detecting its changes, and in accomodating our remedies to them. Under theſe circumſtances, it pleaſed God to enable me to reply to one of the letters that urged my retreat from the city, that "I had reſolved to ſtick to my principles, my practice, and my patients, to the laſt extremity."

On the ninth of October, I viſited a conſiderable number of patients, and as the day was warm, I leſſened the quantity of my clothing. Towards evening I was ſeized with a pain in the back, which obliged me to go to bed at eight o'clock. About twelve I awoke with a chilly fit. A violent fever with acute pains in different parts of my body, followed it. At one o'clock I called for Mr. Fiſher who ſlept in the next room. He came inſtantly

ſtantly, with my affectionate black man, to my relief. I ſaw my danger painted in Mr. Fiſher's countenance. He bled me plentifully, and gave me a doſe of the mercurial medicine. This was immediately rejected. He gave me a ſecond doſe, which likewiſe acted as an emetic, and diſcharged a large quantity of bile from my ſtomach. The remaining part of the night was paſſed under an apprehenſion that my labours were near an end. I could hardly ſuſpect to ſurvive ſo violent an attack of the fever, broken down, as I was, by labour, ſickneſs, and grief. My wife and ſeven children, whom the great and diſtreſſing events that were paſſing in our city, had joſtled out of my mind for ſix or ſeven weeks, now reſumed their former place in my affections. My wife had ſtipulated in conſenting to remain in the country, to come to my aſſiſtance in caſe of my ſickneſs; but I took meaſures, which, without alarming her, proved effectual in preventing it. My houſe was a Lazaretto, and the probability of my death, made her life doubly neceſſary to my family. In the morning, the medicine operated kindly, and my fever abated. In the afternoon it returned, attended with a great inclination to ſleep. Mr. Fiſher bled me again which removed the ſleepineſs. The next day the fever left me, but in ſo weak a ſtate, that I awoke two ſucceſſive nights with a faintneſs

faintneſs which threatened the extinction of my life. It was removed each time by taking a little aliment. My convaleſcence was extremely ſlow. I returned in a very gradual manner to my former habits of diet. The ſmell of animal food, the firſt time I ſaw it at my table, forced me to leave the room. During the month of November, and all the winter months I was harraſſed with a cough, and a fever ſomewhat of the hectic kind. The early warmth of the ſpring, removed thoſe complaints, and I now enjoy, through divine goodneſs, my uſual ſtate of health.

I ſhould be deficient in gratitude, were I to conclude this narrative without acknowledging my obligations to my ſurviving pupils Mr. Fiſher and Mr. Coxe, for the great ſupport and ſympathy I derived from them in my labours and diſtreſſes.

I take great pleaſure likewiſe in acknowledging my obligations to my former pupil Dr. Woodhouſe, who aſſiſted me in the care of my patients, after I became ſo weak as not to be able to attend them with the punctuality their caſes required. The diſintereſted exploits of theſe young gentlemen in the cauſe of humanity, and their ſucceſs in the treatment of the diſorder, have endeared their names to hundreds, and at the ſame time, afforded a pre-

a prelude of their future eminence and uſefulneſs in their profeſſion.

But wherewith ſhall I come before the grea FATHER and REDEEMER of men, and what ſhall I render unto him for the iſſue of my life, from the grave?

——— Here all language fails ———
" Come then, expreſſive ſilence, muſe his praiſe."

FINIS.

CE

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